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"SANE" OBSTETRICS *

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No other division of medicine is fraught with greater dangers to the patient and anxiety to the physician than that of obstetrics. The eclamptic convulsion, the terror of hemorrhage, the devastating ruptured uterus, are only a few of the apparently insurmountable obstacles with which the obstetrician has to contend. The radical treatment of eclampsia, the innovation of prophylactic forceps and version operations in order to shorten labor have all had their disciples. Some are still adherents to these methods, but most have retreated, sadder though wiser practitioners. We shall attempt to rationalize the problem of obstetric risk through an analysis of a group of cases, relatively small to be sure, but sufficient for the end in view.

The material is taken from the ward service of the senior author at the Bronx Hospital, where 1,569 mothers were delivered of 1,584 babies.

The class of patients cared for varied from the extremely poor to the comfortable middle class. Most of these were Jewish.

The expectant mother was required to register with the antepartum clinic before the seventh month of gestation. She was seen at intervals of two weeks up to the last month of gravidity and every week from then on to the time of delivery. This antepartum care consisted of a general physical examination, mensuration, dietetic regulation, as well as reinstallation of neglected personal habits, such as care of the bowels and cleanliness. The appearance of signs of toxemia, blood dyscrasia and the like was promptly met with more frequent observations in the clinic, or, when necessary, hospitalization.

There were 1,441 normal deliveries. Operative delivery, or, as Duncan terms it, "artificial" delivery, was done in 143 cases, a frequency of 9.1 per cent.

The operative deliveries consisted of the following: low forceps, 58; mid forceps, 61; high forceps, 2; version, 16, and cesarean section, 6.

The greatest majority of low forceps operations were done in primiparas, the indications for which, in order of their frequency, were:

(*a*) Maternal distress and prolonged labor (first and second stages).

(*b*) Fetal distress (character of fetal heart as to rate, rhythm and quality, in addition to the mere appearance of meconium, the latter alone not being considered as an indication to terminate labor).

(*c*) Consummation of labor by shortening the second stage in cases of preeclampsia and eclampsia.

(*d*) Contracted outlet (rigid coccyx and outlet contractions in funnel pelvis).

(*e*) Cardiac complications and placenta praevia.

The sixty-one midforceps operations are divided into two groups: (*a*) head anterior at time of operation, 32, and (*b*) head in posterior position at time of operation, 29.

For the first group the Elliot blades were used, as a rule, with the occasional use of the Kielland forceps, which may be employed for occipito-anterior as well as for occipitoposterior and mentoposterior positions. The indications were strict and ran a parallel to those for low forceps, with the additional indication of midplane contraction. For the twenty-nine cases of occipitoposterior position, persistent and requiring rotation, the Kielland forceps were used exclusively.

The occipitoposterior position was encountered 319 times (a frequency of 20.14 per cent), i. e., at the first examination. Spontaneous rotation occurred in 268 cases, (84 per cent): 160 out of 201 right occipitoposterior (80 per cent), and 108 out of 118 left occipitoposterior (92 per cent). Persistence of occiput posterior occurred 51 times (16 per cent); 22 of these (15 right and 7 left), 43 per cent of persistent occiput posterior presentations, or 7 per cent of all occiput posterior presentations, delivered as such; 20 delivering spontaneously, 1 requiring mid forceps, and 1 requiring the aid of low forceps. Twenty-nine of this group of 51 cases (23 out of 41 right occipitoposterior 50 per cent, 6 out of 10 left occipitoposterior 50 per cent, 57 per cent of persistent occiput posterior, or 9 per cent of all cases of occiput posterior required rotation before delivery.

The high forceps operation was done twice. In the two instances the pelves were of the relative assimilation type. The term relative assimilation is applied to a pelvis with ample measurements, in which engagement fails to take place. Repeated observations have led us to the conclusion that engagement does not occur because of an exaggerated tilt of the pelvis with an overhanging promontory. This is not an uncommon occurrence in the short, thick-necked, squat type of patient and is frequently associated with a persistent occiput posterior position. We have since discarded the operation of high forceps and replaced it with cesarean section.

Podalic version and extraction was employed sixteen times for the following indications: (*a*) occult prolapse of the cord, 1; (*b*) prolapsed arm, 1; (*c*) placenta praevia, 2; (*d*) transverse presentation, 9; (*e*) mentoposterior presentation, 1, and (*f*) failure of forceps in persistent occiput posterior (contracted pelvis), 2.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Eighty-Second Annual Session of the American Medical Association, Philadelphia, June 12, 1931.

In this series there was one maternal death, three stillbirths and two neonatal deaths.

Cesarean section was resorted to 6 times in 1,569 cases, a frequency of 0.4 per cent, or 4 per thousand. The indications were as follows: (*a*) central placenta praevia, 3; (*b*) contracted pelvis, 1; (*c*) cardiac disorders, 1, and (*d*) to obtain living baby in moribund mother with cerebral hemorrhage, 1.

The death of this moribund mother was the only one in this group.

Perineal lacerations were sustained in 40 per cent of the cases; 75 per cent of these were first degree, 24.25 per cent were second degree, and 0.75 per cent were third degree. The third degree lacerations (three cases) were in primiparas, and healing occurred by first intention following immediate and extensive repair of the perineal floor.

Episiotomy was performed nine times: eight unilateral and one bilateral.

Bagging was resorted to eight times for the following indications: (*a*) occult prolapse of the cord, 1; (*b*) marginal placenta praevia, 1, and (*c*) transverse presentation with ruptured membranes, 6.

The largest bag possible was used in all cases to avoid a repetition of the procedure in the same patient. Peeling away of the placenta because of the presence of the bag was never observed.

TABLE 1.—*Operative Deliveries*

Operation	Number	Frequency, per Cent	Maternal Death	Neonatal	
				Death	Stillbirth
Low forceps	58	3.7	0	0	2
Mid forceps	61	3.9	1	0	6
High forceps	2	0.1	0	0	0
Version	16	1.0	1	2	3
Cesarean section	6	0.4	1	0	0
Totals	143	9.1	3	2	11

Of the face presentations there were four cases; three right mento-anterior, delivering spontaneously as such, and one right mentoposterior, requiring version and extraction. In private practice we have used the Kielland forceps to advantage for the mentoposterior position.

Fifty-six of fifty-eight breech presentations were treated conservatively, allowing the labor to proceed until the buttocks had passed through the vaginal orifice, from which point manual help by the operator completed delivery. This procedure was followed for both the footling and frank breech. In only two cases was it necessary to break up a frank breech in order to consummate delivery. Of these fifty-eight cases there were only five stillbirths and one neonatal death. The cause of stillbirth in two cases was not determined, while prematurity, maceration and craniotomy on an after coming head of a large baby were the causes of stillbirth in the remaining three. The sole neonatal death was attributed to atelectasis, death taking place ten hours after delivery.

Placenta praevia was encountered seven times, four of the marginal type and three of the central.

MARGINAL

(*a*) Secundipara, seven months gravid, left hospital against advice after bleeding had been controlled.

(*b*) Primapara, six months gravid, delivered by version and extraction, followed by manual removal of placenta; stillbirth.

(*c*) Secundipara, at term, manual dilatation, version and extraction of a living baby.

(*d*) Tertipara, at term, bagging, version and extraction of a living baby.

CENTRAL

Two secundiparas and one primipara at term; all three were operated on by cesarean section in the classic manner, mothers and babies making uneventful recoveries.

Retained placenta occurred four times. One placenta was delivered spontaneously after a two hour wait; one was expressed by the Credé maneuver after a six hour wait, and two were removed manually, both being of the adherent type. The manual removals were made necessary by the advent of profuse hemorrhage, the one immediately after delivery, and the other fifty minutes after delivery.

Postpartum hemorrhage followed the delivery of the placenta in nineteen cases which are here grouped under the headings of atony of the uterus, placenta praevia, adherent placenta, cervical laceration and blood dycrasia.

Eleven cases of hemorrhage were due to atony of the uterus. Four were successfully treated with pressure, solution of pituitary, and a preparation of liquid ergot. Seven were treated by uterine packing. There were two deaths, one due to catastrophic hemorrhage immediately after a normal delivery, the other on the third day post partum following a difficult instrumental delivery, due, no doubt, to some embolic phenomenon resulting from severe trauma.

Placenta praevia was the cause of the postpartum hemorrhage in one case, which required manual removal and uterine packing. Recovery was uneventful.

Two cases of adherent placenta causing postpartum hemorrhage were treated by manual removal and uterine packing, with recovery.

There were three cases of severe cervical laceration resulting in postpartum hemorrhage; two were difficult forceps deliveries and one was a spontaneous delivery. One of the patients delivered by forceps required suturing, but she developed an enormous vulval hematoma two days later and, as a result of this secondary hemorrhage, died. The other two patients were treated by uterine, cervical and vaginal packing and made uneventful recoveries.

Blood dyscrasia as a factor in postpartum hemorrhage appeared twice: one in the form of a splenic anemia, and the other as a purpura hemorrhagica. The first was treated by repeated uterine packing, transfusions and splenectomy. The latter was treated by uterine packing and transfusions but not splenectomy because of the poor operative risk. Both patients died in spite of all forms of desperate attempts to succor them.

Premature separation of the placenta was encountered in two patients. The first, after an eight months' gestation, responded to rest in bed and morphine, later giving birth to a living child. The second, after an eight and one-half months' gestation, going into spontaneous labor, was delivered of a monstrosity by version and extraction. The placenta was attached to the meningocele of an acrania by means of the amnion, thus resulting in the premature separation of the placenta with the onset of descent, and a consequent extension of the head producing a face presentation. The mother made an uneventful recovery.

Only two cases of uterine anomaly were found in the entire series. Bleeding occurred from the nongravid side of a bicornate uterus at monthly intervals from the second to the fifth month inclusive in one patient. She later delivered spontaneously, both herself

and the baby making uneventful recoveries. The other, a mother with a uterus didelphys, was not so fortunate. When she was six months gravid, she developed an acute peritonitis with a streptococcic bacteremia. This condition was secondary to a thrombosis of the blood supply to the right ovary, which was gangrenous. The day following laparotomy, she went into labor, delivered a stillborn child and died the following day. The blood culture was positive for *Streptococcus hemolyticus*. The portal of entry of the infection was never definitely determined.

TOXEMIA OF PREGNANCY

Under the heading of toxemia of pregnancy we divide the cases into three main groups: preeclampsia, nephritic toxemia and eclampsia; the last named being again divided into antepartum, intrapartum, postpartum and combined eclampsias.

There were twenty-four cases of preeclampsia (primiparas, 10; secundiparas, 7; tertiparas, 2; quartiparas, 3; quintiparas, 2, and sextipara, 1). A number of patients, to whom it was advised, refused hospitalization but improved with proper care at home. Three patients were hospitalized, two of whom remained with improvement, ultimately being delivered of living children, while the third left the hospital against advice on the tenth day of her hospital stay, refusing further treatment. The remaining patients were treated in the antepartum clinic, sent home with instructions to go to bed, and advised as to dietetic and eliminative correction. This group of twenty-four patients gave birth to twenty-four babies, nineteen of which were living and remained alive (four of eight months' gestation, and fifteen at term); three were stillbirths (seven and a half months' gestation), and one was born macerated (approximately eight months' gestation).

TABLE 2.—*Postpartum Hemorrhage*

Cause	Number	Treatment		Deaths		
		Medical	Surgical	Primary	Secondary	Cause of Secondary
Atony of uterus...	11	Pressure, solution of pituitary, preparation of liquid ergot, 4 cases	Uterine packing, 7 cases	1	1	Embolus
Placenta praevia..	1	.....	Manual removal, packing	0	0	.....
Adherent placenta	2	.....	Manual removal, packing	0	0	.....
Cervical laceration	3	.....	Cervical suture, 1; packing, 2	0	1	Vulval hematoma
Blood dyscrasia...	2					
(*a*) Splenic anemia		Transfusion	Packing, splenectomy	..	1	Progressive anemia in both cases
(*b*) Purpura hemorrhagica		Transfusion	Packing	..	1	.....
Totals.....	19	Packing was done in 14 cases		1	4	

Under the heading of nephritic toxemia, we list two cases of old nephritic disease with hypertension in a secundipara and a tertipara, neither of which presented any subjective symptoms, and one case of cerebral accident resulting from a chronic nephritis with arteriosclerosis in a secundipara. The first two patients were carried along on strict dietetic and eliminative regimens, coming to term and delivering spontaneously, leaving the hospital in good condition after a ten day stay, with no subjective symptoms, though still showing a hypertension, albumin and casts in the urine. They were referred back to the medical clinic for further observation and treatment. The cerebral accident occurred in a secundipara, who was admitted with unilateral paralysis and in a moribund state. The life of this mother was so far beyond redemption that a cesarean section was decided on to salvage a living baby. The classic operation was performed and a living baby obtained, though the mother died a few hours later.

Eclampsia menaced eight mothers: two antepartum, two intrapartum, three postpartum and one combined antepartum and postpartum.

In the antepartum subgroup of two cases, each patient had three convulsions, was treated by the Stroganoff method, improved, went into labor, and was delivered spontaneously of a living child, both mothers making uneventful recoveries.

In the intrapartum subgroup of two cases, one patient had had an eclampsia with her first baby eighteen months before but refused admission for observation with her second pregnancy, coming to the hospital only when she was in labor, at which time her blood pressure was 200 systolic and 120 diastolic. She was allowed to progress, the blood pressure being taken every fifteen minutes. Toward the end of her second stage, her arterial pressure rose to 230 systolic and 140 diastolic. Preparations were immediately made to consummate labor with forceps, when she suddenly went into a violent convulsion. Prompt anesthesia and rapid forceps delivery resulted in the birth of a living child. The mother had no more convulsions and was discharged from the hospital in ten days with a blood pressure of 140 systolic and 85 diastolic, and a normal urine. The other case was in a primipara, who had had one convulsion during the second stage, was immediately delivered of a living child, and made an uneventful recovery.

In the postpartum subgroup of three cases, one case in particular drives home a definite lesson. Any case of toxemia bordering on the eclamptic is never out of danger until the period of parturition and the puerperium have passed. The fact that a threatened eclampsia has passed the period of parturition does not necessarily mean that that particular case of threatened eclampsia may not become an actual eclampsia. And when this does occur, there is not infrequently the fulminating, catastrophic type of eclampsia. This mother, a tertipara, had been coming to the antepartum clinic regularly. When she was seen in her eighth month, it was noted that her arterial pressure had risen from 120 systolic and 60 diastolic to 140/90, and her ankles had become slightly edematous. She was immediately placed on a regimen of dietetic and eliminative correction. Her improvement was prompt. When at term, she delivered spontaneously after a six and a half hour labor. Thirty minutes postpartum she had one violent convulsion, passed into a state of coma, and died. The baby lived. The second patient was delivered of a living child by the natural forces and had two convulsions post partum but recovered. The third patient had four postpartum convulsions following delivery of an eight month premature infant but also recovered.

In the combined group there was one case. A primipara was admitted to the hospital with a blood pressure of 180 systolic and 120 diastolic, complaining of dizziness, headache, spots before the eyes and edema of the extremities. The urine boiled solid albumin and had many hyaline and granular casts. She had two

convulsions before labor began and one convulsion post partum. Labor began spontaneously and ended with the birth of a 7½ months living premature infant. Both mother and baby made uneventful recoveries.

CARDIAC CASES

This group we divide into the pseudocardiac cases, embracing the functional murmurs and neurocirculatory asthenia; and the true cardiac cases, embracing the various lesions of the heart, singularly or in combination.

The symptom complex of so-called neurocirculatory asthenia presented itself in a tertipara. She went to physician to have her pregnancy interrupted when she was in the fifth month. This she refused. The cardia was enlarged to the posterior axillary line on the left side. Five days before the onset of labor she was admitted in acute decompensation. Liberal use of morphine, together with digitalization by the Eggleston method, served to reestablish her compensation. She went to term and delivered spontaneously, after having refused cesarean section with sterilization. Her puerperium was uneventful.

(*d*) A double mitral and aortic stenotic murmur was elicited in a secundipara, who was admitted to the hospital in acute decompensation with enlargement of the

TABLE 3.—*Toxemias of Pregnancy*

Toxemia	Number	Convulsions	Treatment: Expectant	Treatment: Operative	Previous Eclampsias	Premature: Lived	Premature: Stillborn	Premature: Died	Term: Lived	Term: Stillborn	Term: Died	Maternal Death
Preeclampsia	24	.....	Dietetic Eliminative Correction	.....	0	4	5	..	15	..	..	0
Nephritic	3	.....	2	1 cesarean section	0	..	..	..	3	..	..	1
Eclampsia												
(a) Antepartum	2	3 each	Stroganoff	.....	0	..	..	..	2	..	..	0
(b) Intrapartum	2	1	Stroganoff plus forceps in both	.....	1	..	..	..	2	..	..	0
(c) Postpartum	3	1, 2, 4	Stroganoff	.....	0	1	..	..	2	..	..	1
(d) Combined	1	3	Stroganoff	.....	0	1	..	..	..	..	..	0
Totals	35		34 Expectant	1 Operative	1	6	5	..	24	..	..	2

term after a prolonged period of rest in bed and delivered spontaneously, mother and baby making uneventful recoveries.

The functional systolic murmur, heard over the left base of the heart and nonradiating, was observed twice in primiparas and once in a secundipara. All three went to term, delivering spontaneously without any untoward complications.

Of the true cardiac lesions, there were the following:

(*a*) Mitral regurgitation was observed in ten cases, in primiparas seven times and in secundiparas three times. Nine went to term, eight of whom delivered living children spontaneously and one was aided by a low forceps operation. One patient, a primipara, had a partial separation of the placenta in the eighth month, went into labor, and gave birth to a living child. None of these mothers showed signs of decompensation, although they presented evidence of cardiac hypertrophy.

(*b*) Mitral stenosis was found once, in a tertipara, with no impairment of compensation. She went to term, gave spontaneous birth to a living child, and was discharged from the hospital in good condition.

(*c*) The double mitral lesion occurred twice, both in secundiparas. The one, with no history of decompensation, went to term, delivered spontaneously and made an uneventful recovery. The other gave a history of decompensation and had been advised by her family cardia to the right and left. Compensation was reestablished with the aid of morphine and digitalis. Twelve days after admission, she was delivered by cesarean section and sterilized under spinal anesthesia. She left the hospital two weeks later well compensated.

Solution of pituitary was used for two purposes. In the first place, as a routine procedure, in 1 cc. doses following the completion of the second stage, to aid and abet the separation of the placenta and to arrest postpartum hemorrhage. In this series of cases we did not find a single instance in which this procedure was the cause of a retained placenta, as has been reported by so many authors. In the second place, it has been used judiciously and conservatively, as well as cautiously,

TABLE 4.—*Cardiac Patients in Pregnancy*

Lesion	Number	No History of Decompensation	History of Decompensation	Decompensation on Admission	Treatment: Expectant	Treatment: Operative	Maternal Death	Neonatal: Premature Lived	Premature Stillborn	Premature Died	Term Lived	Term Stillborn	Term Died
Mitral regurgitation	10	10	..	..	10	1 low forceps	0	1	..	..	9	..	..
Mitral stenosis	1	1	..	..	1	.....	0	..	..	..	1	..	..
Double mitral	2	1	1	1	2	.....	0	..	..	..	2	..	..
Double mitral aortic stenosis	1	..	1	1	..	Cesarean-1	0	..	..	..	1	..	..
Totals	14	12	2	2	13	2	0	1			13		

to promote labor pains of a lagging uterus, after complete dilatation, with engaged head, and in the absence of dystocia.

PELVIC ABNORMALITY

Under the heading of pelvic abnormality are two groups, the relative and the true abnormalities of the pelvis. Under the latter heading appears generally contracted pelvis, the rigid coccyx, funnel pelvis, simple flat pelvis, and chondrodystrophic pelvis. By relative abnormality reference is made to the "relative assimilation" pelvis. Although the inlet and outlet measurements were apparently normal in this subgroup, yet the marked protuberance of the high or low promontory was sufficient to cause interference with the progress of labor, by deflecting the presenting part, thus caus-

ing it to override the symphysis, allowing access to the true pelvis, only by the process of asynclitism. The occipitoposterior position was not infrequently associated with this type of pelvis.

Under the heading of generally contracted pelvis we had two cases, both in primiparas with vertex presentations, delivering spontaneously of small babies.

There was one case of rigid coccyx in a primipara, in which low forceps and episiotomy was the method employed to consummate delivery of a small child.

In the subgroup of funnel pelvis we had two cases, both in primiparas. The first was delivered by mid forceps with episiotomy, mother and baby making uneventful recoveries. The second was in an elderly primipara with a persistent occiput posterior. She sustained a severe second degree laceration as a result of a midforceps operation, followed by a postpartum hemorrhage. On the third day post partum she developed a huge vulval hematoma and, as a result of this secondary hemorrhage, died before transfusion could be given.

A simple flat pelvis was encountered twelve times: eight in primiparas, two in secundiparas, one in a tertipara and one in a quartipara. Six primiparas of these babies weighed from 5 to 6½ pounds (from 2.3 to 2.9 Kg.) there were two cases in the simple flat group, in a secundipara and in a tertipara, which were delivered spontaneously of a 7 pound 11 ounce (3.5 Kg.) and an 8 pound 8 ounce (3.8 Kg.) baby, respectively. This is made possible by a moldable head, a mobile pelvis, and the mechanism of asynclitism. It is also of value to point out the fact that previous delivery by the vaginal route of a fairly large baby does not preclude some form of dystocia in a subsequent delivery.

MATERNAL MORBIDITY

In a series of 1,046 successive cases including normal and abnormal deliveries, the gross morbidity was 8.13 per cent. The net morbidity was 6.77 per cent. The standard of morbidity used in this group was a temperature of 100.4 F. on any two days post partum excluding the day of delivery. There were seventy patients who had elevation of temperature attributable to obstetric causes. Rise of temperature as a result of nonobstetric causes occurred 22 times due to the following: acute otitis media, 1; acute cholecystitis with lithiasis, 1; grip, 7; bronchitis, 6; pyelitis, 6; *Streptococcus hemolyticus* bacteremia with

TABLE 5.—*Pelvic Abnormality*

Pelvis	Number	Parity	Presentation	Delivery: Spontaneous	Delivery: Forceps	Delivery: Version	Delivery: Cesarean	Mat. Deaths	Fetal Term: Lived	Fetal Term: Stillborn	Fetal Term: Died	Cause of Maternal Death
Generally contracted	2	I, I	Both vertex	2	.....	..	..	0	2	..	..	
Rigid coccyx.....	1	I	Both vertex	..	Low, 1	..	..	0	1	..	..	
Funnel.....	2	I, I	Both vertex	1	Mid, 1	..	..	1	2	..	..	Vulval hematoma
Simple flat.....	12	I, 8 II, 2 III, 1 IV, 1	11 vertex 1 transverse	8	Low, 1 Mid, 1	2	..	1	10	2	..	Embolus
Chondrodystrophy..	1	I, 1	Vertex	..	.....	..	1	0	1	..	..	
Totals.....	18		17 vertex, 1 transverse	11	Low, 2 Mid, 2	2	1	2	16	2		

delivered spontaneously, one required mid forceps, and one version and extraction after the failure of forceps. The last patient was delivered of a stillborn child, the mother dying on the second day post partum while talking to some visitors. Death was probably due to an embolic phenomenon, as a result of trauma sustained at the time of delivery. Of the secundiparas, one delivered spontaneously and one required the aid of low forceps. The tertipara delivered spontaneously, while the quartipara required version and extraction for a transverse position with prolapsed arm.

There was only one absolute contraction of the pelvis. This was found in a case of chondrodystrophy. Delivery was effected by elective low cervical cesarean section and resulted in the birth of a live baby, the mother making an uneventful recovery.

The casualties in this group of pelvic abnormalities consisted of two maternal deaths, one macerated fetus, and one stillbirth. In retrospect it must be noted that in two deaths, one in a patient with a simple flat pelvis with a stillbirth and one in a patient with a funnel pelvis with a live baby, though delivery by the vaginal route proved possible, yet cesarean section might have proved the better choice of delivery. We probably carried a point too far in favor of the vaginal route in these cases, for cesarean section would probably have given us two live mothers and another live baby.

We must also not lose sight of the fact that, even in contracted pelvis, the delivery of a fairly large baby by the vaginal route is not impossible. Although most gangrene of ovary and acute primary peritonitis ante partum, 1.

The net morbidity for 957 normal deliveries was 5.02 per cent. In the 89 operative deliveries that were done in this series of 1,046 cases, the net morbidity was 25 per cent; or the morbidity in operative obstetrics is more frequent than the morbidity in normal obstetrics in the ratio of 5: 1.

MATERNAL MORTALITY

There were 9 maternal deaths in this series of 1,569 cases, or a percentage of 0.00573, indicating a frequency of 5.73 per thousand. These deaths were attributable to four preventable and five nonpreventable causes. Under the heading of preventable causes are listed:

(*a*) Eclampsia.

(*b*) Embolic phenomenon following severe trauma from delivery by version after the failure of forceps in a flat pelvis.

(*c*) Postpartum vulval hematoma following difficult delivery with postpartum delivery.

(*d*) Postpartum hemorrhage.

Under the nonpreventable causes of death are listed:

(*a*) Antepartum cerebral hemorrhage in a case of chronic arteriosclerosis with nephritis.

(*b*) *Streptococcus hemolyticus* bacteremia, ante partum.

(*c*) Splenic anemia.

(*d*) Purpura hemorrhagica.

(*e*) Acute intestinal obstruction.

There was therefore a net mortality of 4 in 1,569 cases, or a percentage of 0.00254, indicating a frequency of 2.54 per thousand.

Of the 1,569 mothers delivered, all deaths due to preventable causes but one occurred in operative deliveries, giving a mortality of 0.0007, or 0.7 per thousand for 1,426 normal deliveries. The deaths in operative deliveries were 3 in 143 cases, or a percentage of 0.02127, or 21.27 per thousand. Therefore the mortality risk in operative deliveries is to that in normal deliveries in the ratio of 30:1.

INFANT MORTALITY

Out of 1,584 babies born to these 1,569 mothers (thirteen pairs of twins and one set of triplets accounting for the discrepancy) there were thirty-eight stillbirths, an incidence of 2.4 per cent or 24 per thousand. There were eleven neonatal deaths, or a secondary infant mortality rate of 0.7 per cent, or a frequency of 7 per thousand.

The combined primary and secondary infant mortality of forty-nine cases gives a total infant mortality rate of approximately 3.1 per cent, or 31 per thousand. The total mortality in nonoperative cases due to all causes was 36 in 1,441 cases or a mortality risk of 2.5 per cent. Therefore the infant mortality risk in operative cases is to that in nonoperative cases in the ratio of 3.6:1.

COMMENT

If the reader up to this point has been convinced that we are making a plea for conservative rather than for radical obstetrics, we hope that he will quickly disillusion himself, though not entirely. The plea is rather for sane obstetric practice. Extremes in any field of medicine present too many loopholes to stand criticism. That these extremes are often a means to an end, there is no denying. That such extremes can be tempered with good judgment, thus nullifying their faults when applied to practice, there is also no denying.

We have presented an analysis of a series of cases treated conservatively. By conservatively we mean the weighing of indications for operative intervention before its application. The only prophylactic form of obstetric procedure that was employed in this series of cases was the antepartum treatment accorded every patient, the closer watching and observation accorded to the particular patient showing signs of toxemia, threatened miscarriage, premature delivery or premature placental detachments, and the routine use of solution of pituitary following the completion of the second stage. The use of low and mid forceps, as well as version and cesarean section for absolute indications only, the conservative treatment of eclampsia, breech presentation and occiput posterior presentation resulted in an operative incidence of only 9.1 per cent.

Such infrequent use of operative obstetrics has amply rewarded our efforts with a net maternal morbidity of only 6.77 per cent; a net maternal mortality of only 0.254 per cent, or 2,54 per thousand; a primary infant mortality rate of 2.4 per cent or 24 per thousand, and a secondary infant mortality rate of 0.7 per cent, or 7 per thousand.

Such figures are not presented with a subtle purpose of braggadocio for obstetrics as practiced by one institution but rather as an example of what can be accomplished by so-called sane obstetrics. The female of the species has not been created and dedicated to the ultimate purpose of being a subject to the practice of faddists, be they sponsors of prophylactic forceps, delivery by routine version, or preachers of the gospel of cesarean section as the easiest way out. Let us not burn in effigy the physical capabilities of the mother of today to withstand the rigors of labor and damn her as a poor decrepit weakling alongside our mothers of yesteryears. Our female generation of today is as well adapted, if not better, both physically and mentally, to bear the brunt of childbirth. If the element of humane treatment must be entered alongside the column of childbirth in our ledger, what greater humaneness can we extend to the suffering mother than to conduct her through her trials and tribulations as sensible guides, without undue haste, and with sure step. The rational use of morphine and the proper help in the proper time is the sort of salvation of which the mother of today, in the long run, will be most appreciative.

To what qualifications does the obstetrician justify his existence, if not to guide and direct the expectant mother through her period of anxiety, to the best of his good judgment, and with the least possible risk to her? The obstetrician's haste may prove the mother's tragedy, not only to herself but to those near and dear to her, as well as to society in general. A little patience with an occiput posterior presentation will more than reward the attending physician with a successful outcome of his labors, and the mother with a living child and retention of her physical well being. To wit, out of 319 occiput posterior presentations, only 51 were persistent, out of which only 29 required rotation, a frequency of 9 per cent of all occiput posterior presentations. The terrible desire to pull on a footling, or break up a breech before complete dilatation, not infrequently results in disaster. Most breech presentations will be propelled far enough by natural forces to make their ultimate delivery one of simplicity, if only the accoucheur has the temerity to wait. In only two cases out of fifty-eight did we find it necessary to break up a breech in order to effect delivery. Haste to deliver a second baby of twins before the uterus has had a chance to readjust itself to its diminished content will often result in tragedy, for the grim specter of postpartum hemorrhage is thereby invited to a feast. What matters it if the obstetrician must give up another few hours of his valuable time waiting for the other of the maternal fruit, when the welfare of a mother is at stake? The same gospel of waiting can be applied in the same way to the third stage of labor.

When bagging becomes necessary, it is to the benefit of the mother that the largest possible bag be used the first time in order to avoid a repetition of the procedure. For, as Williams has shown, the frequency of infection becomes increasingly greater with the number of times the uterus has been entered from the outside.

The treatment of eclampsia should be begun in the antepartum clinic; yes, the first time that the patient is seen by her physician. Such treatment should consist of purely preventive medicine; and so we can diminish the need for curative medicine. Once an eclampsia is encountered, there is no excuse for the physician to become stricken with a panicky desire to empty the uterus. To date, our conservative treatment for eclampsia still holds out the greatest hope; and if

TABLE 6.—*Obstetric Risk*

	Morbidity Risk	Mortality Risk	Infant Mortality Risk
Operative			
Normal	5 : 1	30 : 1	3.6 : 1

it does not prove better than the radical treatment, at least it has proved just as efficient.

The mother who is a cardiac patient is not necessarily doomed. Most cardiac patients, with proper care of their general physical condition, and special care to conserve their compensation, will go through their pregnancies and labors with flying colors. The cardiac patients who require special treatment are those with histories of previous decompensation. This group usually embraces those cases with mitral stenosis, or multiple valvular and myocardial lesions. In advising a cardiac patient as to future pregnancies, the physician must bear in mind the reduced life expectancy in such patients. If she is an old primipara, it must be borne in mind that her already short life expectancy will no doubt run the gantlet of further abbreviation if she is allowed to become gravid.

The most important part of the treatment of contracted pelvis is the recognition of the contracted pelvis. How many a mother was allowed to pound away for days, when delivery by the vaginal route was practically an impossibility in her case. A fair test of labor is always in order. Failure to engage does not necessarily signify cesarean section. A small enough baby will allow of successful delivery by version. It must be remembered, before section is considered, that in the best hands, cesarean section entertains a far greater primary mortality than delivery by the natural routes. The low section in its various modifications (Beck, De Lee), the Latzko, will save many a mother that might be lost by the classic operation. The reasons for this have been gone over so frequently that it would be superfluous to repeat them. One's judgment receives its greatest test in that portion of obstetrics which deals with the abnormal pelvis. Mistakes have been made and will be made so long as the human element enters into the making of such decisions. One must, much to one's chagrin, ascribe certain failures of judgment to the law of averages. Most obstetricians, no doubt, recall such errors in their past experiences. Again, a careful weighing of the pros and cons, without due haste, will serve to diminish the percentage of error.

CONCLUSIONS

1. The expectant mother should have the benefits of "sane" obstetrics, rather than conservative or radical obstetrics.

2. Such "sane" obstetrics can be maintained within the sphere of the incompetent though sincere physician and of the competent though overenthusiastic physician, by education of the former as to his limitations and of the latter as to the limitations of his modus operandi.

3. The full cognizance by these two groups of the "obstetric risk" as an actual reality rather than a mere fantasy will temper their judgments, so that the incompetent will not plunge where angels fear to tread, and the overenthusiastic will not belabor the expectant mother with heavy artillery where diplomacy will serve better for her ultimate salvation.

4. The obstetric risk in this study shows that: (*a*) The morbidity risk in operative obstetrics was to that in nonoperative obstetrics in the ratio of 5:1. (*b*) The mortality risk in operative obstetrics was to that in nonoperative obstetrics in the ratio of 30:1. (*c*) The total infant mortality risk in operative obstetrics was to that in nonoperative obstetrics in the ratio of 3.6:1 (including spontaneous deliveries of macerated fetuses, premature infants and monstrosities).

5. The mother of today is as fully equipped, mentally and physically, to undergo the hardships of labor as was the mother of yesteryear. A sound realization of this fact, together with a full cognizance of obstetric risk, will diminish the search for new fads to shorten labor, and thereby result in a diminished maternal and infant morbidity and mortality.

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ABSTRACT OF DISCUSSION

DR. FREDERICK W. RICE, New York: In my opinion the report of the results of 1,500 deliveries from a maternity service is of greater value in judging the methods of management of cases than the consideration of the mortality results. If the results in maternal and infant mortality are to be judged, the records of a great many more deliveries, covering several years, must be made. It will then be possible to know definitely regarding methods of management and that the technic employed during delivery is one that is practical and safe. Every one realizes the dangers when operative deliveries are frequent, especially when the service is strained by the periodic overcrowding observed in all active services. There are many other problems and difficulties which test the management of a maternity service, such as the prevalence of influenza in some years and the eclampsia cases, which vary in number and severity in different years. Most city maternity hospitals have also a constant problem to meet in the variety of races among the patients. The Bronx Hospital is so located that the patients are almost entirely Jewish. It is felt that this is favorable to a lowered mortality. In my service at Bellevue Hospital, all races are represented. This mixture of races means more vigilance and obstetric judgment on the part of the staff, for the individual case. Dystocia and lowered resistance to infection are common among the Negro and Porto Rican women. A large number of our patients are from these races. The mortality rate is directly influenced by the proportion of emergency cases admitted. A hospital so located that it must provide care for many patients seen for the first time in labor must expect to have a higher death rate than the hospital which is able to limit its care to patients who have registered early in pregnancy. The future reports from the Bronx Hospital, I feel, will continue to show a low maternal and infant mortality. An attempt is being made to carry out the principles of obstetrics which should be the ideal of every maternity service. An endeavor is made to have complete care for every patient. As a result of intelligent observation during pregnancy and the prevention or treatment of complications during the early stages when results are always better than when complications are well developed, these operative deliveries are being limited to patients definitely needing them. This is evident from the small percentage of forceps and cesarean operations. I feel that there is no need for a new term or designation for such practice. I feel that obstetrics as carried out is not different from the principles that thoroughly trained obstetricians are teaching and practicing. The occasional exception necessitating radical measures does not justify the use of such a term as sane obstetrics.

DR. BENJAMIN H. BREAKSTONE, Chicago: Every once in a while one hears that term "sane" used. What is sanity, especially in this line? Is it a proper thing to let a woman go on and suffer labor and lower her vitality? The high mortality in intervention is caused by waiting too long. If any labor is difficult one should not wait, and rather than go at it blindly with forceps and versions it is much easier on the patient and there is a much lower mortality if a cesarean section is done as an operation of first resort. The reason there is a high mortality is that cesarean section is done as a last resort. I have been doing these things for many years, I have never regretted it, and I never have lost a mother. I believe that I am getting better results than I would by letting the patient go on and have her baby and be lacerated and have her resistance lowered. More than half the patients who have a difficult labor either have heart trouble later as a result of overstraining during labor, or have to undergo repair. The lacerations cause trouble later. Half of the gynecologic operations are performed because physicians still believe in leaving it to nature. Other things

are not left to nature, but physicians call it sane if a woman is allowed to suffer for two, three and four days in labor. I believe that if any labor is difficult the woman should be aided. Recently Dr. Olkon wrote a paper on epilepsy; he stated that, in over 2,000 histories that he had examined, all of the babies that acquired epilepsy later were the products of a difficult labor in which the brain was probably injured. He also looked into some thousand histories of babies born the cesarean way, without a single case of epilepsy, in which the cesarean section was performed early, before the baby's head was all misshapen. I believe that "sane" means that intervention should be done early if intervention is to be done at all. It is not human or scientific to permit the test of labor to go on to the end. Nature is improved on. Nature is not permitted to take her course because she does not always take the best one. I believe the time will come when any woman who is going to have a difficult labor will be subjected to a cesarean operation because a physician can see what he is doing and when the abdominal cavity is open for inspection one often finds the reason why the woman had a difficult labor.

DR. J. P. GREENHILL, Chicago: Two points of view have been presented: one by the authors on so-called sane obstetrics, which represents ultraconservatism, and the other by Dr. Breakstone, who favors extremely radical obstetrics. There is, of course, a middle ground to which most obstetricians belong. I take strong exception to Dr. Epstein's statement that ultraconservative obstetrics is necessarily sane obstetrics and that all sane obstetrics is necessarily so-called conservative or nonoperative. Many women are allowed to have a long, hard labor which may do harm to them and their babies. It cannot be said that these women have been dealt with sanely. It is true that this is called conservative obstetrics, but does it really conserve? There are times when a cesarean section, the most radical of all obstetric operations, conserves the lives of both mother and baby and is therefore a conservative operation. The authors condemned the routine use of prophylactic forceps, podalic version and cesarean section. They are correct in condemning the routine use of any operation, whether obstetric or otherwise; but the results of the frequent use of low forceps operations, call it prophylactic if you will, are practically as good as and sometimes better than spontaneous deliveries. Many times a properly performed low forceps operation, that is, forceps applied when the head is on the perineum, will save a baby's life. It will certainly conserve the mother's energy; it may prevent postpartum hemorrhage and it may prevent morbidity. I would urge that the word "sane" be eliminated from this discussion. Otherwise those who do not permit their patients to labor and labor until they are exhausted simply to avoid an operative delivery but frequently resort to low forceps operations and occasionally to versions and cesarean sections would have their work called insane and I would rather not have that term applied to me.

DR. T. W. PRESTON, Carlisle, Pa.: Forceps delivery will be necessary as long as girls from 12 to 18 years of age are forced to wear high-heeled shoes, making a deflection of the pelvis and making it almost impossible to deliver a normal baby in a normal sized woman without forceps. In the last twenty years I have delivered by forceps seven times as many babies as I did prior to that time. I call sane obstetrics taking care of the mother. Some books say we should not dilate too much. I dilate when I am first called and wait.

DR. E. D. PLASS, Iowa City: I think something should be said at this session about the pernicious effects of radical obstetrics. So far we have heard the good results of conservative obstetrics; we have been regaled with ideas that the use of radical operative procedures should be looked on as harmless. I have recently completed a survey of cesarean section in this country for the White House Conference. Briefly, that survey has shown that about 1 per cent of all deliveries in this country are accomplished by the abdominal route. The incidence in the hospitals of the country, taking into consideration over 150,000 deliveries in 1929, was 2.9 per cent. The maternal mortality incident to cesarean section in the entire group of cases studied was about 6 per cent. Since those figures were figures from only the better class hospitals and the larger hospitals, I believe it is fair to assume that one patient in ten who is delivered by cesarean section dies, either as a result of the operation itself or as a result of the condition for which the operation was done. Equally striking was the conclusion that was forced on me that 10 per cent of all the babies born by cesarean section died. Either they were stillborn or died during the early period of life. All the available evidence points to the conclusion that it is not necessarily the fact that one does a cesarean section which leads to mortality but the fact that the people who do cesarean sections cannot be made to understand when they should be done. Those facts have been emphasized from time to time, and yet it seems to have gone completely over the heads of most of the medical profession that there is a legitimate time for cesarean section, a legitimate place for it, and that in that place it is worthy of use, but that many of the indications which have sprung up more recently, those indications which I choose to call convenience indications, are not applicable to abdominal delivery. I believe that two facts should be faced: one, that the maternal mortality in this country is increasing; second, that the wide use of operative obstetrics, particularly of cesarean section, is the largest single contributing factor to this country-wide increase in maternal deaths.

DR. JOHN A. MCGLINN, Philadelphia: I think that if men who are doing obstetrics will compare the work in their private practice with the work they are apt to do in the hospital in the wards when the patient is sent in, they will find themselves perhaps a little bit more conservative in the treatment of their own private patients than they are apt to be in the treatment of the patients admitted in ward service when they are using those patients for teaching purposes for the residents and for their assistants. I think it would be wise if communities would do what is being done in New York and Philadelphia. In Philadelphia we realize our responsibility in relation to public health and public activities, and therefore last year we formed a close alliance with every public agency in Philadelphia. In Philadelphia there are more than a hundred extra-medical health agencies. At the present time they have all been brought together under the Philadelphia Health League, and the president of the county medical society becomes president of that league. The league has agreed to further research work along certain lines, and one of the first things which we are investigating under the auspices of the county medical society, with a committee formed from the Philadelphia Obstetrical Society, is this question of maternal mortality, and every death that occurs in Philadelphia in the next three years will be carefully investigated. We shall be able to learn from such a survey just what and why our maternal mortality is. If other communities would take up that work and study particularly just what is happening, at the end of three or five years they would be in a position to draw some valuable conclusions and undoubtedly would be able to reduce the mortality.

DR. H. J. EPSTEIN, New York: Dr. Fleischer and I are thankful to all who have participated in the discussion. If we did not bring out some points that have been mentioned, it was caused by lack of time, which a reading of the entire paper will bring out. We called it "sane" obstetrics to distinguish it from conservative or radical obstetrics. We looked for a term and did not know what to name it. As a matter of fact, we were not conservative in our hospital; we never thought of being purely conservative. We used every modern method toward getting good results. We used the Kielland forceps, the low cesarean operation, version and extraction. One thing we wish to make clear, if we did not, and that is that every method is good in the proper case, but no method can apply to all cases. If somebody is an expert in version, it does not mean that he can apply this to every case that comes to him. When we see a patient exhausted, instead of applying forceps and terminating labor—I beg to differ with Dr. Breakstone—we give her morphine and rest and let her deliver spontaneously. Let me confess to you that in our private work in the hospital we find more intervention than in the ward work. We do not pretend to have material for teaching purposes. Our interns have to be satisfied with eighty-six forceps operations in a year; but when it comes to the question of using any method to hasten delivery, the private practitioners that come to our hospital are the ones who usually resort to any sort of procedure in order to save time. As far as cesarean section is concerned, I can say this: I have known of certain institutions that deliver 1,000 cases a year, 50 of which are by cesarean section, and they "brag"

about it. We had only 6 cesarean sections in over 1,500 cases. True, we did not need the cesarean sections for teaching purposes; we used them only when they were absolutely indicated. In general, I believe that not all cases of intervention should necessarily be classed as radical obstetrics. I would say that "sane" obstetrics consists in using progressive methods to benefit the patient, rather than abusing the patient for the sake of the method.

POSTVACCINAL MYELITIS

REPORT OF A CASE

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The acute inflammatory lesions of the nervous system reported as occasionally following vaccination against smallpox usually have presented the clinical symptoms of encephalitis or poliencephalitis. In cases with paramount spinal cord involvement, even when the lesions accompany smallpox itself, the sensory impairment has been negligible or transient. As a contrast to this generally accepted picture the following case is presented on account of the unique clinical observations, namely, complete spinal anesthesia persisting up to the level of the ninth dorsal segment with accompanying paralysis.

REPORT OF CASE

History.—A white boy, aged 6 years, was vaccinated in the outpatient department of Providence Hospital according to accepted routine methods on Sept. 9, 1930. Mulford's vaccine was used, the time limit for its use being dated October, 1930. Three scarifications were made close together and about one-eighth inch (0.3 cm.) in length on the outer aspect of the middle third of the right arm. The lesions were inspected on the fifth day when no reaction had as yet taken place. Inspection was made again on the eighth day at which time a marked reaction had developed. The area about the lesion was inflamed to the extent of about 2 inches (5 cm.) in diameter. The general reaction was little more severe than is usually encountered, and the child continued to attend school.

On September 22, after returning from school in the evening he complained of feeling tired, but played with the other children. He went to bed unusually early that evening. On awaking the next morning, he had a fever, but walked about somewhat subdued and ate breakfast. At noon he vomited greenish matter and then refused anything more to eat. In the afternoon he went to bed; when he awoke before supper, he could not use his legs and could not void. This was the fourteenth day following the vaccination. During the following night he was restless and vomited several times. At 5 p. m. on the following day he was admitted to the Children's Ward of Providence Hospital with a temperature of 101.2 F., a pulse rate of 80 and respirations 25.

Examination and Course.—The patient, a well developed and nourished boy, was lying supine in bed unable to move his lower extremities which were found to be paralyzed and flaccid. The bladder was distended halfway to the umbilicus. All sensation was absent in the lower extremities and on the trunk to the approximate level of the seventh dorsal segment. Reflexes could not be elicited in the lower extremities. In the upper extremities sensation and reflexes were normal, but the grip in the left hand was notably weaker than that in the right. The neck muscles were moderately stiff (grade 1). There was no observed abnormality referable to the cranial nerves, and the patient was alert mentally. Physical examination was otherwise negative.

The urine showed a faint trace of albumin, and an occasional red, white and squamous epithelial cell was present. Examination of the blood showed 3,540,000 red blood cells, 10,000 white blood cells and 70 per cent hemoglobin. Spinal puncture was done in the fourth lumbar interspace. The fluid was under normal pressure (16 cm. by Ayre's manometer), and there was prompt response to cough and jugular pressure. About 8 cc. of fluid was removed, and it exhibited a faint straw color. The Wassermann and Kahn tests of the spinal fluid were negative; globulin was 2 plus, the colloidal gold curve negative, the cell count 50 and the culture of the fluid negative.

The patient continued in his acute course, his temperature ranging as high as 104 F. In view of the fact that some success had been reported [1] in the treatment of this condition with so-called convalescent serum, it was thought that such serum should be given a trial. Blood was taken from three children who had been vaccinated successfully about seven weeks before, and 8 cc. of this serum was given intravenously on the afternoon of September 29, the sixth day of the paralysis. No reaction was observed; the only immediate change seemed to be that the child became somewhat drowsy early in the evening and slept through the entire night. He awoke the next morning feeling better, and 7 cc. of the serum was injected an hour after breakfast. This was the only therapeutic measure carried out other than symptomatic treatment and the occasional administration of urinary antiseptics.

In the acute stage at this time the highest transverse level of anesthesia was at the nipple line. It gradually receded to a level about 2 inches above the umbilicus where it remained. The paralysis did not alter, but it was observed that the right lower extremity was gradually becoming smaller. On the thirty-sixth day after the onset of the paralysis, the left calf measured 10⅘ inches (27.4 cm.) in circumference; the right, 9⅖ inches (23.8 cm.); the left thigh, 6 inches above the knee, 14⅖ inches (36.5 cm.), and the right thigh, 12⅘ inches (32.5 cm.).

At the time of the present writing, six months and a half after the onset of paralysis, anesthesia remains at a level just above the umbilicus with accompanying flaccid paralysis below that level.

COMMENT

This case presented clinical and laboratory signs of spinal meningomyelitis. The sensory level seemed to indicate that the inflammation in the acute stage had progressed only to the level of the fifth dorsal segment, although motor signs pointed to mild inflammatory involvement in segments considerably higher. The sensory level two months after onset was in the eighth dorsal segment.

Cases of this type with a definite sensory level in the spinal cord are rare. Peake [2] reported a case with the sensory level at the ninth dorsal segment in the acute stage which cleared up almost completely within a month. Other similar cases [3] have had either transient or no sensory involvement, the clinical picture simulating poliencephalomyelitis. Spiller's cases were true smallpox.

Prodromal symptoms in the present case began on the thirteenth day after vaccination; in most reported cases onset has occurred between the tenth and thirteenth days. It has been noted [4] that the disease is most severe between the ages of 3 and 6 years, and that infants are relatively immune. Reports on permanent sequelae give no approximation of their relative frequency, but mortality statistics indicate fatality in from 35 to 50 per cent of cases—the former figure in 150 Dutch cases in the period from 1924 to 1928; the latter figure in 93 English cases in the period from 1922 to 1928.[4] In regard to other etiologic factors, it seems that there is no evidence of contagion and no seasonal variation, but twice as many cases have been reported in females.

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2. Peake, H. G.: A Case of Postvaccinal Transverse Myelitis, Roy. Army M. J. **53**: 443-445 (Dec.) 1929.
3. Perritt, R. A., and Carrell, R. C.: Postvaccinal Myelitis, J. A. M. A. **94**: 793 (March 15) 1930. Spiller, W. G.: A Report of Two Cases of Paraplegia Occurring in Variola, One Being a Case of Acute Poliomyelitis in an Adult, Brain **26**: 424, 1903.
4. Flexner, Simon: Postvaccinal Encephalitis and Allied Conditions, J. A. M. A. **94**: 305-311 (Feb. 1) 1930.

As to the theories of specific causation, (*a*) it is now considered erroneous to assume that the vaccine virus itself is the cause of the inflammation in the nervous system; (*b*) it is still held as a remote possibility that the processes of vaccination may convert a latent encephalitic infection into an active one; (*c*) it is now considered improbable that the condition is due to an anaphylactic shock caused by an antibody reaction on the nervous tissue which has been sensitized by the vaccine virus; (*d*) the condition is most probably the result of an intercurrent infection with the inflamed vaccinated area as a primary focus.

The pathology in inflammations of the nervous system following vaccination is distinct from that seen in epidemic encephalitis but similar to the pathology of such inflammations following such diseases as measles and scarlet fever.[4] The first lesion is degenerative, demyelinization with areas of apparent softening; then exudation and proliferation occur. In the latter process "cuffs" of cells—neuroglial, endothelial, plasma and polymorphonuclear—concentrate about the blood vessels and extend toward the parenchyma. In epidemic encephalitis, on the contrary, proliferation and infiltration are outstanding. Grossly, the postvaccinal inflammation is widespread throughout the nervous system, as a rule, whereas in epidemic encephalitis the basal ganglions are the chief centers of pathologic changes. The pathology of poliencephalitis is mainly in and about the anterior horn cells.

The clinical picture of true poliencephalitis, as well as of true encephalitis, differs from that of the postvaccinal syndrome, and the difference is readily accounted for by the pathologic changes mentioned.

1800 K Street, North West.

DIPHTHERIA TOXOID (DIPHTHERIA ANATOXIN-RAMON) IN INFANCY*

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Diphtheria toxoid (diphtheria anatoxin-Ramon) is coming into wide usage in the active immunization against diphtheria. This antigen has given uniformly good results with the production of complete immunity in a high percentage of persons. Ramon and Helie[1] state that diphtheria anatoxin was widely used in the active immunization against diphtheria in France during 1924, 1925 and 1926, vaccination having been done on persons of all ages and in all walks of life. Thousands of children were immunized and the proportion rendered immune averaged from 90 to 95 per cent when two injections were used, and from 97 to 100 per cent with three injections. Equally good reports are beginning to appear in the American literature. The Dicks[2] reported a comparative study of the effectiveness of diphtheria toxoid and toxin-antitoxin in a series of susceptible adults. They were able to immunize 94 per cent of 100 susceptible persons with diphtheria anatoxin, using the three dose method of Ramon, while five doses of toxin-antitoxin immunized 82 per cent of 100 susceptible persons. They concluded that diphtheria toxoid, as prepared by Ramon and given in three doses as recommended by him, is a better immunizing agent than 0.1 L + diphtheria toxin-antitoxin mixtures, even when five doses are given. Moloney and Fraser[3] immunized a group of girls from 10 to 18 years of age, using two doses of diphtheria toxoid, 0.5 cc. each, at an interval of one month; 70 per cent of these susceptible persons were shown to have become immune. Weinfeld and Cooperstock[4] immunized 104 medical students and nurses, 89 of whom received two doses, 1 cc. each three weeks apart, and 15 one dose. Of those receiving two doses, 92 per cent were rendered negative, while 46 per cent of those receiving one dose became negative. Zingher[5] obtained 98 per cent immunity using three doses, 86 per cent with two doses and 60 per cent with one dose. Lereboullet[6] reported results on 1,414 children vaccinated with diphtheria anatoxin. In this group, two injections produced immunity in 95 per cent and three in 100 per cent.

Schwartz and Janney[7] inoculated ninety-three children, sixty-five of whom were below 2 years of age. Of these, ninety-two were rendered Shick negative after three doses of diphtheria toxoid. These authors conclude that diphtheria toxoid offers the ideal method of diphtheria immunization in the child of preschool age. Frankl, Herzog and Nobel[8] immunized 163 susceptible children, all of whom were positive reactors to tuberculin. They found 93.8 per cent to be immune six weeks after the beginning of immunization, while practically 100 per cent were rendered Schick negative after the eighth week.

It is generally agreed that the most favorable period at which diphtheria immunization may be carried out is toward the end of the first year of life. Since diphtheria toxoid gives practically no reaction at this age, it should offer the ideal method of immunization. To determine the effectiveness of this method, all positive reactors to the Schick test in a large home for infants were selected and given active immunization with diphtheria toxoid. Ordinary commercial diphtheria toxoid was used. Two doses of 1 cc. each were given. In the beginning, an interval of three weeks was allowed between doses. Since the average stay in this institution is rather brief, it was found that a considerable number were leaving the home before immunization was completed and before a follow-up Schick test could be done. We were anxious to render these infants immune as rapidly as possible, in order to prevent the outbreak of diphtheria in the wards, which were badly overcrowded at the time. The interval between injections was therefore shortened to one week. Follow-up Schick tests were done at intervals of two weeks after the second dose of diphtheria toxoid wherever possible.

In all, 145 children were given either one or two injections of diphtheria toxoid. Of these, immunization was completed in 117 infants and follow-up Schick tests were done on 100 of these. In the group

* From the St. Vincent's Infant Hospital and the Department of Pediatrics, University of Illinois College of Medicine.

1. Ramon, G., and Helie, G. I.: Diphtheria Prophylaxis in France, J. A. M. A. **91**: 1028 (Oct. 6) 1928.
2. Dick, G. F., and Dick, Gladys H.: Immunization Against Diphtheria, J. A. M. A. **92**: 1901 (June 8) 1929.
3. Moloney, P. J., and Fraser, C. J.: Immunization with Diphtheria Toxoid, Am. J. Pub. Health **17**: 1027 (Oct.) 1927.
4. Weinfeld, G. F., and Cooperstock, Moses: Comparative Effects of Diphtheria Toxoid and Toxin Antitoxin as Immunizing Agents, Am. J. Dis. Child. **38**: 35 (July) 1929.
5. Zingher, Abraham: Immunity Results with Diphtheria Toxoid, and 1/10 L + Mixtures of Toxin-Antitoxin, Proc. Soc. Exper. Biol. & Med. **22**: 462, 1924-1925.
6. Lereboullet, P.; Boulanger-Pilet, and Gournay: Vaccination Against Diphtheria, Bull. et mém. Soc. méd. d. hôp. de Paris **50**: 683 (April 30) 1926.
7. Schwartz, A. B., and Janney, F. R.: The Comparative Value of Toxoid and Other Agents in the Immunization of the Preschool Child Against Diphtheria, Am. J. Dis. Child. **39**: 504 (March) 1930.
8. Frankl, G.; Herzog, H., and Nobel, E.: Ueber die Ommunisierung gegen Diphtherie mit dem Ramonschen Anatoxin, Wien. med. Wchnschr. **78**: 1155 (Sept. 8) 1928.

completely immunized, thirty-six received injections at a three weeks interval and eighty-one at a one week interval.

The age at which diphtheria toxoid was given varied from the new-born period to 2 years. The youngest infant in the series to receive diphtheria toxoid was 4 days old. The distribution of cases according to age is given in table 1. The greatest number of vaccinations done were in young infants, 60 per cent being below 8 months of age. This is due to the fact that most of the children in this home are young infants

TABLE 1.—*Age at Which Diphtheria Toxoid was Given*

	Age						
	1st 2 Weeks	2 Wks. to 1 Mo.	2, 3 and 4 Mo.	5, 6 and 7 Mo.	8 Mo. to 1 Year	12 to 18 Mo.	18 Mo. to 2 Yrs.
Number	12	18	30	27	32	17	9
Per cent	7.2	12.4	20	18.6	22	11.7	6.1
	Under 8 Months				8 Months to 2 Years		
Number	87				58		
Per cent	60				40		

under a year, and is not a reflection of the incidence of the positive Schick test according to age groups.

Results of immunization as measured by the Schick test were very satisfactory. In the 100 infants who remained in the home long enough for follow-up Schick tests, 98 became negative and 2 remained persistently positive. The rapidity with which immunity developed is illustrated by table 2. A considerable percentage demonstrated a negative Schick test by the end of the second week after the last injection, and by the sixth week practically all had become immune. Of the two who remained persistently positive, one received two doses three weeks apart and the other two doses one week apart.

INCIDENCE OF DIPHTHERIA

During the period of fourteen months in which this work was carried out, three cases of diphtheria occurred in the hospital. One of these appeared in a child shortly after admission before a Schick test could be done or any immunization given. The other two occurred in children who received diphtheria toxoid. The first of these had a positive Schick test and received one dose of diphtheria toxoid. Before the second dose was given, he contracted a nasal diphtheria. The second child, a boy, had a positive Schick test, Dec. 12, 1930, and received 1 cc. of diphtheria toxoid, December 15, and a second dose, December 22. Jan. 12, 1931, a Schick test was done and found to be negative. January 20, the child developed a fever and a nasal discharge; a culture was taken and found positive for diphtheria. He received therapeutic antitoxin and, after recovery, succeeding Schick tests, January 31, and March 24, were both negative. This phenomenon can be explained in one of two ways: either the Schick test, January 12, was not accurate or the illness was not diphtheria. Since all tests were done and read by one individual and always done in a large group with a potent toxin, it does not seem likely that the Schick test was inaccurate. Cases of clinical diphtheria occurring in immunized individuals are repeatedly reported. Dudley [9] states that such cases are either coincidental infection in carriers or perhaps mild cases of diphtheria in partially immune subjects. Frankl, Herzog and Nobel [8] had 13 cases of clinical diphtheria in their series of 163 immunized children. Five of these reacted negatively to the Schick test before becoming ill. It is possible, however, that this child was carrying diphtheria organisms in his throat and simply had a coincident infection of the respiratory tract.

TABLE 2.—*Interval Between Second Injection of Diphtheria Toxoid and Resultant Negative Schick Test*

	2 Weeks		4 Weeks		6 Weeks		8 Weeks		10 Weeks		12 Weeks	
Int. Test	+	0	+	0	+	0	+	0	+	0	+	0
Number	17	40	7	22	2	18	2	10	2	7	2	1
Per cent	30	70	25	75	10	90	16	83.4	22.2	77.8	66.6	33.3

PERSISTENCE OF IMMUNITY

Lereboullet [10] found persistence of the negative Schick test in 100 per cent of immunized patients eight months after the two injections. Roubinowitch, Loiseau and Lafaille [10] also report persistence of the negative reaction at intervals of twelve, nineteen and twenty-eight months and four years after vaccination. In contrast to these observations is the report of Frankl, Herzog and Nobel.[8] These investigators retested 57 of the 163 children immunized and found that the immunity did not last more than six months in 14 per cent.

Of the ninety-eight patients completely immunized in this series, retests were carried out on thirteen at intervals of from three to ten months following the vaccination. Of this number, one child again demonstrated a strongly positive Schick reaction at six months. This child was inoculated at the age of 2 weeks and gave its first negative reaction four weeks after vaccination. The remaining twelve cases continued to show negative reactions, two of these ten months after vaccination (table 3).

TABLE 3.—*Persistence of the Negative Schick Test*

Time After Vaccination	10 Months	6 Months	5 Months	4 Months	3 Months	Total
Negative....	2	1	2	2	5	12
Positive.....	0	1	0	0	0	1

REACTIONS

Of 145 infants receiving diphtheria toxoid, only 2 demonstrated any reaction. In both this was mild, consisting only in moderate local erythema and fever lasting twenty-four hours. Ramon and Helie [1] state that these reactions are due to a sensitivity to certain specific proteins in the toxin. The incidence of such reactions in young infants therefore is slight, since they have not yet acquired sensitivity. It is interesting in this connection to note that both reactions occurred in older infants, 19 months and 10 months of age. It seems likely that in an institutional environment infants are more likely to acquire such sensitivity than in private homes.

SUMMARY

One hundred and seventeen infants ranging in age from 4 days to 2 years were vaccinated against diphtheria with two 1 cc. doses of commercial diphtheria toxoid. Complete immunity, as measured by the Schick test, was obtained in 98 per cent of these infants. The appearance of immunity was quite rapid, a considerable

9. Dudley, S. F.: The Schick Test and Its Application, Quart. J. Med. **22**: 321, 1929.
10. Quoted by Ramon and Helie (footnote 1).

proportion showing a negative Schick reaction two weeks after the second injection. Reactions were noted in only 2 of 147 cases; both of these were very mild. In a small group in whom the persistence of immunity was tested, one case occurred in which the Schick reaction turned positive six months after vaccination. Three cases of clinical diphtheria occurred during the period of investigation. One of these appeared in a vaccinated child with a succeeding negative Schick reaction.

CONCLUSION

Immunization against diphtheria, as measured by the Schick test, can be produced rapidly and safely in a high proportion of infants by the use of two 1 cc. injections of diphtheria toxoid.

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DIABETIC COMA WITH MARKED HYPERGLYCEMIA AND RECOVERY

REPORT OF A CASE

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We add another case of diabetic coma with marked hyperglycemia and recovery to the few that have already been reported:

A man, aged 53, entered the Santa Barbara Cottage Hospital, Jan. 6, 1931, in coma. A relative who accompanied him stated that the patient had noticed a voracious appetite, polydipsia, polyuria, a drowsy feeling after eating, and frequent bilious attacks for some time. The disorder had been intermittent with periods when the man was apparently in good health. He had lost 85 pounds (38.6 Kg.) during the preceding eight months. Six years prior to admission all his teeth had been extracted in the hope of relieving neuritic pains in the arms and legs. Two months before admission he had developed small necrotic lesions on both feet. These had stubbornly refused to heal and had grown progressively larger. A considerable amount of foul smelling pus exuded from them. Recently he had experienced an increasing feeling of lassitude and weakness. Ten days prior to entry to the hospital he began to have frequent spells of profound sleep, from which it was difficult to arouse him. After being aroused he would be fed, but would vomit after a short while and then fall back into sleep.

The patient's home was in an isolated rural district. He had been unable to retain any food or fluid in his stomach for several days when a relative visited him, February 2. The patient's sister was also diabetic. The relative tested the patient's urine for the first time and found that it contained much sugar. No medical advice had yet been sought. The party left home early in the morning of February 6 and traveled 260 miles. On arrival at the hospital at 3 p. m. the patient was in profound coma.

His face was flushed, the skin was dry, the lips were cherry red, and the breath smelled heavily of acetone. The rectal temperature was 97.4 F.; the pulse was 120 and markedly irregular from extrasystoles; the respiratory rate was 24. There was no Kussmaul type of breathing. The blood pressure was 118 systolic and 88 diastolic. The eyeballs were soft and jelly-like in consistency. The pupils were equal and reacted to light. The extremities were spastic but could be extended and flexed by prolonged steady pressure. There were several abscesses on both feet, which exuded a foul smelling, purulent discharge.

The urine specimen showed Benedict's test for sugar ++++, acetone ++, diacetic acid ++, albumin +, a few hyaline casts, pus cells 200 per high power field, red cells from 10 to 20. The blood count showed 80 per cent hemoglobin (Sahli); erythrocytes, 4,900,000; leukocytes, 7,000.

A blood sugar determination revealed the marked hyperglycemia of 0.9 per cent by the Shaffer method and 1 per cent by the Folin-Malmros method. The blood cholesterol was 222 mg. The content of carbon dioxide was not taken.

The immediate treatment in addition to the giving of insulin consisted of digitalis and caffeine sodiobenzoate hypodermically, heat to the extremities, hypodermoclysis of 1,000 cc. of physiologic solution of sodium chloride, and an enema of warm soap suds. Five per cent dextrose was given by vein and by rectum later.

The urine was tested as voided. The blood sugar was estimated every two hours at first, later daily. Thirty units of insulin was administered hypodermically on admission. During the first eight hours, insulin was given every fifteen minutes. In this interval the patient received 560 units, of which 120 was given intravenously. The intravenous dose equaled 40 units; the hypodermic injections varied from 10 to 20 units. At the end of eight hours the patient roused slightly, answered his name when asked, and began to take fluids by mouth. From 1 a. m. to 7 a. m., 10 units of insulin was given every hour. At 7 a. m., February 7, the blood sugar was 0.216 per cent. The patient was very restless and beginning to take fluids spontaneously. His intra-ocular tension had increased. During the sixteen hours that had elapsed since his admission he had received 630 units of insulin and 3,300 cc. of fluid. Of this fluid, 1,000 cc. had been given as a hypodermoclysis of physiologic solution of sodium chloride, 1,000 cc. as a proctoclysis of 5 per cent dextrose, 1,000 cc. of 5 per cent dextrose intravenously, and 300 cc. of sweetened tea by mouth.

By 3 p. m., February 7, twenty-four hours after he had been admitted, the patient had received a total of 660 units of insulin. Thirty more units was given during the remainder of that day.

February 8 the urine was sugar-free. On this day the patient took 1,400 cc. of fluid by mouth in addition to some soft food. He received 60 units this day. February 9, his blood sugar rose to 0.533 per cent fasting. He was placed on a diet consisting of 154 Gm. of carbohydrates, 50 Gm. of protein and 77 Gm. of fat, yielding 1,509 calories, with 36 units of insulin a day.

February 12, the blood sugar was 0.242 per cent and on February 15, 0.152 per cent fasting.

February 14, the left leg was amputated under general anesthesia at the junction of the middle and lower thirds. Following the operation the blood sugar was 0.202 per cent and the carbon dioxide content 72 per cent by volume. The patient made an uneventful recovery. At present, on a diet consisting of 320 Gm. of carbohydrate, 60 Gm. of protein and 160 Gm. of fat, yielding 2,960 calories, he is sugar-free with 53 units of insulin daily. The last fasting blood sugar was 0.236 per cent. From 0.02 to 0.04 per cent of albumin continues to be excreted daily.

We have found mention in the literature of three cases of diabetic coma with a higher initial blood sugar than our case, and recovery. Foster[1] mentions a case with 1,260 mg. of blood sugar, Curtis and Dixson[2] report a case with 1,680 mg., and Shepardson and Anderson[3] report 1,090 mg. Higher blood sugar values have been recorded in fatal cases.

SUMMARY

A case of diabetic coma is reported with the marked initial hyperglycemia of 900 mg. per hundred cubic centimeters of blood. Recovery followed intensive insulin management.

Santa Barbara Cottage Hospital.

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2. Curtis, W. S., and Dixson, I. M.: Extreme Hyperglycemia in Diabetic Coma with Recovery, J. A. M. A. **90**: 1115 (April 7) 1928.
3. Shepardson, H. C., and Anderson, E. M.: Endocrinology **13**: 188 (March-April) 1929.

RATS AS CARRIERS OF MEXICAN TYPHUS FEVER*

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In preceding studies two of us[1] reported, among other things, that the *Rickettsia* of Mexican typhus fever will remain alive and virulent within the bodies of bedbugs and of three varieties of ticks for periods as long as from ten to fourteen days. Dyer, Rumreich and Badger[2] have recently recovered the virus of the North American type of the disease from fleas collected from rats caught in a typhus focus. These investigations, showing that *Rickettsia* can survive in and perhaps be transmitted by a number of blood-sucking insects parasitic on both animals and man, give strong experimental support to the suggestion made by Maxcy[3] in 1926 to the effect that there might be a reservoir of typhus infection in some species of domestic animal from which the disease can be conveyed to man by an insect vector, possibly "fleas, mites or ticks." In studying the epidemiology of typhus in the southeastern part of the United States, Maxcy came to the conclusion that the distribution, both in time and in place, and the environments in which the cases occurred did not warrant the assumption that the disease was kept endemically prevalent by louse transmission from man to man. He cited two reports of Australian outbreaks, in one of which typhus infection was believed to be associated with the handling of wheat and other foodstuffs and in the other of which the relationship of the outbreak to a migration of mice was so suggestive that the disease was spoken of as "mouse fever." As the animals related to man most likely to be under suspicion, Maxcy mentions rodents, particularly rats and mice.

When our own work on the viability of *Rickettsia* in insects had reached the stage reported in our papers, we concluded that we should subject the suggestions of Maxcy to a more direct experimental study. The results of Dyer's investigations, published at about this time, naturally encouraged us in undertaking this.

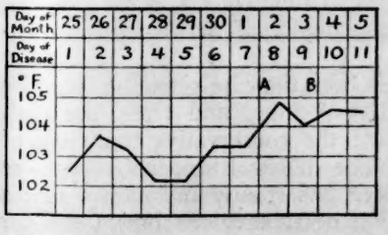

Chart 1.—Clinical record of guinea-pig 1, Belem strain I, inoculated intraperitoneally with an emulsion of brain material prepared from the brains of two rats trapped in Mexico City. Left testicle, typical Rickettsia, extracellular. Castrated. Typical appearance of tunica. Extracellular Rickettsia found. Cultures negative. No brain lesions found. *A*, swelling right side; *B*, swelling left side.

The obvious method of procedure was to select some region where typhus fever was prevalent and there to make a rat and mouse survey with the purpose of determining, if possible, whether the virus was present in these animals. We chose Mexico City, not only because of the fact that the disease takes its annual toll of the population in this place, but because of the fact that one of us was actively engaged in typhus studies in the laboratory of the American Hospital of that city and was thoroughly familiar with local epidemiologic conditions.

The work herein recorded was made possible largely by the helpful interest of the Federal Department of Health of Mexico, to whose director, Dr. Rafael Silva, and to many of whose associates we are indebted for permission to carry out the work and for much actual assistance. The study is, in fact, a collaboration between the Mexican health department and the laboratories mentioned in our title. Financial assistance was furnished from the DeLamar Mobile Research Fund of the Harvard University Medical School.

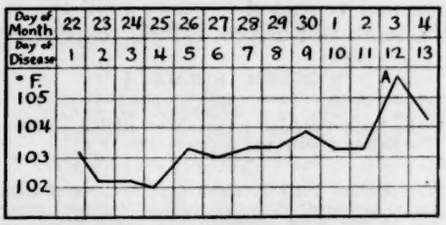

Chart 2.—Clinical record of guinea-pig 1, Belem strain II, inoculated with brain emulsion prepared as for guinea-pig 1. Belem strain I from two rats trapped in Mexico City. Spleen with small abscess. Tunica with fibrin and hemorrhagic zones. Rickettsia, typical intracellular and extracellular. Cultures negative. *A*, swelling.

When the work was begun, in April, there was a seasonally late, moderate epidemic of typhus fever in Mexico City, which was concentrated chiefly in three of the more thickly populated quarters. We were permitted to place rat traps in favorable places in the houses of these parts of the city and arrangements were made to collect "catches" at the American Hospital laboratory each morning. Here the rats and mice were etherized, combed for insects and examined post mortem. The brains were removed, emulsified in sterile salt solution and injected intraperitoneally into male guinea-pigs, either singly or, whenever several rats from the same location were available, as mixed suspensions of the brains of several rats. The purpose of pooling the brains of rats, caught in the same place at the same time, was to save guinea-pigs in an investigation that was likely to last some time and necessitate much material.

From April 17 to May 6, eighty-nine rodents were trapped, of which sixty-nine were *Mus rattus*, twelve were *Mus decumanus* and eight were mice.

Among the places in which rats were caught was the old Belem prison, in which a number of cases of typhus fever had occurred early in the epidemic and where it was not impossible that the epidemic had started. A number of the rats were trapped in this prison and their brains injected into eight guinea-pigs. Of these, six remained normal, as did all other guinea-pigs injected up to that time with the brains of rats from other locations. The reactions of two of these guinea-pigs, however, were typical of typhus fever, and a description of these strains is our purpose in this communication.

These two guinea-pigs were injected intraperitoneally, April 22 and April 25, respectively, each animal receiving an emulsion of brain material representing the brains of two rats, in each case trapped on the same day in the Belem prison. The rats were all *Mus*

* From the American Hospital, Mexico City, and the Department of Bacteriology and Immunology of the Harvard University Medical School.

1. Ruiz Castaneda, M., and Zinsser, Hans: J. Exper. Med. **52**: 661 (Nov.) 1930. Zinsser, Hans; and Ruiz Castaneda, M.: Ibid., to be published.

2. Dyer, R. E.; Rumreich, A., and Badger, L. F.: Pub. Health Rep. **46**: 334 (Feb. 13) 1931.

3. Maxcy, K. F.: Pub. Health Rep. **41**: 2967 (Dec. 24) 1926.

rattus. Charts 1 and 2 represent the reactions obtained in the two guinea-pigs described.

The accompanying tabulation shows the results of transmission in a series of Belem strain I, which has been carried through the fourth guinea-pig generation.

Controls with a typhus strain, which we called the Mooser strain, because it was one originally obtained by Mooser in Mexico City with which all the immunologic and insect work published by two of us was done, were made in normal guinea-pigs in order to control the immunity reactions described in the charts.

Two rabbits inoculated with fourth generation Belem strain I guinea-pig tunica, namely, the tunica of guinea-pig 10, showed no Weil-Felix agglutination before inoculation and remained negative until the ninth day, but on the tenth and eleventh days, respectively, developed a sharp rise of temperature to 105.8 F. and a positive Weil-Felix agglutination, at first 1:20, then 1:40, and 1:80 on the eleventh and twelfth days, respectively.

BELEM STRAIN I

April 25, the brain emulsion prepared by mixing brains of two rats caught in the Belem prison was injected into:

G.-P. 1

Temperature 104.9 F. ninth day; swelling of right testis; castrated; Rickettsia cultures negative; swelling of left testis eleventh day; lesions typical of Rickettsia extracellular (chart 1)

G.-P. 2: May 3 inoculated with tunica G.-P. 1; temperature 105 F.; swelling sixth day; Rickettsia intracellular and extracellular

G.-P. 3: Duplicate of G.-P. 2; reinoculated, May 23, with Mooser strain and found immune

G.-P. 4: May 6, brain of G.-P. 1; typical temperature curve; no swelling; recovery; died of intercurrent infection after twenty-one days

G.-P. 5: May 6, tunica G.-P. 1; temperature 104 F. on fourth day; swelling on fifth; reinoculated, Mooser strain, and found immune

G.-P. 6: May 8, blood of G.-P. 2; temperature 104 F. and swelling eighth day; reinoculated, Mooser strain, and found immune

G.-P. 7: May 8, tunica of G.-P. 2; temperature 105.8 F. and swelling on third day; Rickettsia ++

G.-P. 8: May 8, tunica of G.-P. 2; temperature 104.9 F. on fifth day; 105.8 F. eighth day; reinoculated sixteenth day with Mooser strain and found immune

G.-P. 9: May 7, tunica of G.-P. 3; mild but definite temperature curve; reinoculated with Mooser strain and found immune

G.-P. 10: May 11, tunica of G.-P. 7; temperature 104.9 F.; swelling and typical Rickettsia ++ sixth day

G.-P. 11: Duplicate of G.-P. 10

For the sake of saving time and space we do not protocol Belem strain II. The guinea-pig inoculated with the rat brains, April 22, showed a typical reaction on the twelfth day, as shown in chart 2.

This strain has been carried into the fourth generation both in guinea-pigs and from one of the second generation guinea-pigs through a rat and back to guinea-pigs, with results entirely comparable to Belem strain I and quite as convincing.

COMMENT

The work just described has shown that virus indistinguishable from the ordinary virus of tabardillo, or Mexican typhus fever, has been recovered from the brains of rats trapped in Mexico City in locations where cases of typhus fever had occurred, and during a period in which a moderate epidemic of typhus fever was prevalent. This work is a direct confirmation of the evidence obtained indirectly through fleas by Dyer of the existence of a reservoir of typhus fever in rats and confirms the original suggestion made by Maxcy, in 1926, in regard to the epidemiology of the North American disease. The belief that the virus recovered from the rats is identical with that of Mexican typhus fever is based on typical reactions in guinea-pigs, with elevated temperature and testicular swelling, the presence of characteristic *Rickettsia*, immunity reaction and the development of Weil-Felix agglutination reactions in inoculated rabbits.

The manner of possible transmission of the disease from rats to man is being investigated by an analysis of the insects found on the rats and in the houses where typhus fever has occurred. This work is being continued by two of us in Mexico City and will be reported on at a later date. Also, the frequency with which rats infected with typhus fever can be found cannot be judged until many more animals have been collected, this communication being merely in the nature of a preliminary report.

CONCLUSIONS

The infectious agent of Mexican typhus fever has been found in the brains of *Mus rattus*, trapped in locations where typhus fever is prevalent, and these animals may be regarded as carriers of the disease and an important factor in epidemiologic control.

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DIAGNOSTIC INACCURACY IN TUBERCULOSIS OF BONE, JOINT AND BURSA*

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In recent years, time honored statistics purporting to show this or that in tuberculosis have been subjected to criticism because of the alleged inclusion of case material that was not tuberculosis. Thus, with the recognition of Legge-Perthes disease, the reports of the results of the treatment of tuberculosis of the hip joint in children became the object of acrimonious dissension.

Particularly has this been the case since the operative school, headed by Hibbs,[1] Albee and Hass, has challenged the rationale of the conservative treatment of joint tuberculosis. The older European school, as exemplified by Rollier,[2] has stoutly maintained that a considerable proportion of tuberculous hips (40.6 per cent), knees (58.4 per cent) and feet (66.6 per cent) heal with retention of normal motion and do not recur on prolonged observation. The operative school suggests that these best cases never were tuberculosis and asks whether it is not likely that diagnoses not pathologically controlled are too faulty to believe. I may, in passing, state that in a review of eighty-eighty cases of patients that were seen in the department of orthopedic surgery of the State University of Iowa and eventually accepted as Legge-Perthes disease it was found that thirty-one, or 35.2 per cent, had been diagnosed as tuberculosis on first admission. Sundt,[3] reviewing 243 cases of supposed tuberculosis seen between 1903 and

* From the Departments of Orthopedic Surgery and Pathology, State University of Iowa College of Medicine.

1. Hibbs, R. A.: J. Bone & Joint Surg. **12**: 749 (Oct.) 1930.
2. Rollier, Auguste: J. Bone & Joint Surg. **12**: 733 (Oct.) 1930.
3. Sundt, H.: Tubercle **2**: 289 (April) 1921.

1918, could accept but 171. Among the remainder were 41 cases of Legge-Perthes disease, 15 cases of arthritis deformans, 6 of osteomyelitis and 2 of syphilis. Between 1911 and 1918 were seen 113 cases of supposed tuberculosis. On review, Sundt stated that only 64 were "surely, presumably or possibly" tuberculosis.

The average response to this is the spirited retort that clinicians of experience diagnosed tuberculosis repeatedly and correctly before the isolation of the tubercle bacillus, and that the clinical picture is quite clear enough. To insist on a biopsy in a dubious case smacks of a confession of defeat. Furthermore, since conservative treatment alone is to be utilized, operation for such a purpose is unjustifiable.

In this service, as in most others in America today, operative fusion is frequently indicated in tuberculosis. Consequently, a positive preoperative diagnosis is much

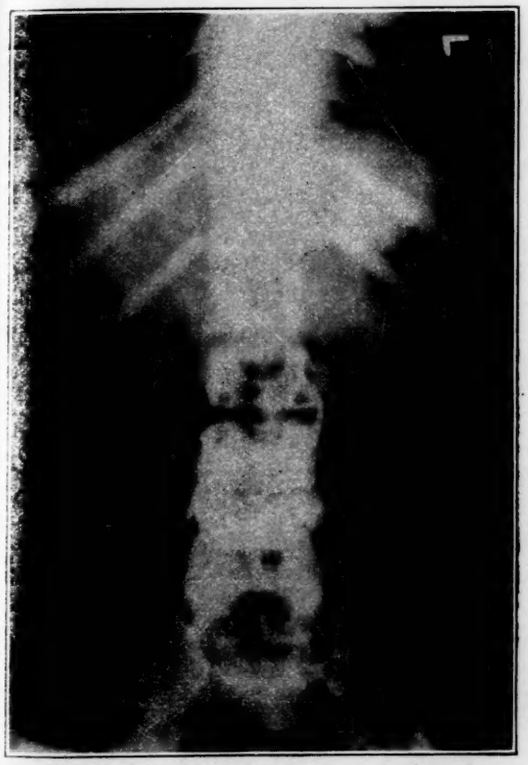

Fig. 1.—Sclerosis of the bone in a proved case of closed tuberculosis in a Negro, aged 28: The roentgenogram is quite misleading because of new bone formation. The case was diagnosed clinically as hypertrophic ostearthritis.

to be desired before proceeding to the permanent eradication of joint function.

In the files of the past ten years, 986 patients of this service remain listed as being tuberculous. It was desirable to review experience in the diagnosis of acid-fast lesions. Rather than analyze this group in the gross, it seemed advisable to review clinical impressions only in those cases which had been verified in the pathologic laboratory. The pathologic files were therefore examined and 142 such cases were obtained.

This group of definitely tuberculous cases was then considered with the following main questions in mind:

1. How many were incorrectly diagnosed clinically?
2. In the group that was not clinically labeled tuberculous, what factors entered into the misdiagnosis? Did the clinical picture approximate the textbook description of joint tuberculosis in history and symptomatology? Would these mistakes be clinically corrected were similar cases encountered again?
3. How valuable as adjuncts to clinical diagnosis was examination with the x-rays and the tuberculin test?
4. Of the tuberculous cases diagnosed as nontuberculous before operation, in what percentage were the operators able to recognize the lesion and correct their erroneous opinion at operation? Were the gross pathologic changes susceptible of recognition by experienced surgeons?

Table 1 summarizes the answer to the first query.

TABLE 1.—*Accuracy of Clinical Diagnosis*

	Cases	
	Number	Per Cent
Total number of proved cases analyzed.....	142	100.0
Diagnosed clinically as tuberculous.....	87	61.3
Not diagnosed clinically as tuberculous.....	55	38.7

The proportion of inaccuracy in table 1 corresponds to the finding of Hibbs [4] (hips 22 per cent), and Friedrich [5] (35 per cent), who have reported a simliar series in the literature.

FACTORS CONCERNED IN CLINICAL INACCURACY

Onset.—The classic picture emphasizes particularly the insidious onset of joint tuberculosis. In general, the observations in this series partially sustain this generalization in that the average duration of all lesions to pathologic verification was 3.1 years.

But in 29.5 per cent, the onset was sudden. It is illuminating to reflect that in this group 61.9 per cent were incorrectly diagnosed and only 38.5 per cent correctly diagnosed. Comparison with the cases of insidious onset reveals that in the latter group the percentages are practically the reverse of those encountered in the group of sudden onset. Obviously, the insistence on a gradual onset in the clinical picture of tuberculosis of joints is most unhappy.

As to the relation of trauma, nothing definite could be adjudged save that the appearance of symptoms after an unusually severe injury followed often by prolonged incapacity for labor was a frequent observation.

Thirty nine, or 26.7 per cent, of the entire group stated that the pain was severe at the onset, whereas 103, or 73.2 per cent, presented the classic picture of mild to absent pain. The insistence on mild pain in "closed tuberculosis" is not justified in this material.

TABLE 2.—*Onset*

	Cases	
	Number	Per Cent
Insidious	100	70.4
Correctly diagnosed	71	71.0
Incorrectly diagnosed	29	29.0
Sudden	42	29.5
Correctly diagnosed	16	39.0
Incorrectly diagnosed	26	61.9

Signs.—The variability of signs was marked, and statistical analysis of factors such as the degree of muscle spasm, muscle atrophy and functional limitation was not found possible. The anatomic location often modified signs considerably. So, diaphyseal lesions exhibited considerable local tenderness. Thus, synovial lesions confined to distant recesses of the knee joint presented minimal signs, whereas articular destruction

4. Hibbs, R. A., and Von Lackum, H. L.: End-Results in Treatment of Knee Joint Tuberculosis, J. A. M. A. **85**: 1289-1292 (Oct. 24) 1925.
5. Friedrich, H.: München med. Wchnschr. **77**: 1443 (Aug. 22) 1930.

was characterized by obvious limitations of function on examination. The rapidity of appearance and the extent of abscess formation, for example, depended not only on fascial plane relationships but also on the personal equation of the patient and on the organism, a quantity not susceptible of mathematical expression.

Occasionally, a patient walks into the clinic complaining of mild malaise. On examination, he is found to be riddled with miliary tuberculosis. Yet, his neighbor wheeled in, in a dying condition, may be afflicted with lesions of apparently similar extent and degree. One expects to encounter such amazing contrasts in resistance in many diseases. Yet, in diagnosing lesions of the locomotor system, one is, for the most part, of the opinion that the patient's reaction to tuberculosis must be uniform. It is this variability in response that has called forth the opinion from Steindler that the clinical pathology of tuberculosis in a large measure is still unwritten.

Fig. 2.—Necropsy specimen of patient in figure 1. Sagittal section from the first lumbar to the fifth lumbar vertebra. Marked sclerosis of cancellous bone (tip of forceps), loss of disk and bony fusion between the third lumbar and the fourth lumbar vertebrae.

Multiplicity of Lesions.—The monarticular or local character of surgical tuberculosis appears to be overstressed in the classic description. In this series of proved cases thirty-five, or 32.7 per cent, presented two or more lesions. In several cases this was responsible for a diagnosis of chronic infectious arthritis, corrected only after biopsy.

Regional Accuracy.—Tabulation in terms of anatomic regions obtained the results given in table 4, which

TABLE 3.—*Classification of Lesions*

	Cases	
	Number	Per Cent
Single, demonstrable, osseous or synovial lesion	107	75.3
Multiple, demonstrable, osseous or synovial lesions	35	24.6
Such lesion associated with demonstrable visceral lesion	80	56.3
Pulmonary	58	40.8
Such lesion not associated with demonstrable visceral lesion	62	43.6

suggest that, in those joints or regions in which the possible lesions are most numerous, wrong diagnoses are most in evidence. For example, tuberculosis was frequently undiagnosed in the hip or knee, whereas it was almost regularly recognized in the spine.

In diaphyses of the long bones, in which tuberculosis is presumed to be a rare occurrence, it was missed in every one of the ten cases encountered.

Diagnostic Adjuncts.—Roentgen examination, while usually helpful, was often the reverse. In fifty-three cases, such examination was of no aid or was misleading. The appearance of free bodies in the knee, or local bone formation in uncomplicated tuberculosis of the spine, for example, resulted erroneously in the diagnosis in the one case of osteochondritis dissecans, in the other case of hypertrophic arthritis (figs. 1, 2 and 3).

TABLE 4.—*Regional Accuracy*

	Total Cases	Incorrectly Diagnosed	Percentage Error
Sacro-iliac	5	0	00.0
Hip	17	7	41.1
Knee	35	13	37.1
Ankle and tarsus	16	4	25.0
Shoulder	5	4	80.0
Elbow	7	3	46.6
Wrist and carpus	5	3	60.0
Diaphyseal	10	10	100.0
Dactylitis	1	0	00.0
Bursae	6	5	83.3
Tendon sheath	5	3	60.0
Spine	30	3	10.0

In general, the roentgenogram reflected in atrophy or destruction the common pathologic changes of tuberculosis of tissue but could not easily and frequently be interpreted to suit a wrong diagnosis. Particularly was this the case when an unusual tissue reaction such as bone formation had taken place. A review of the plates in the light of the pathologic observations was often not illuminating. The error would probably be made as readily again. The x-rays are merely a useful adjunct.

Tuberculin Test: The value of a negative tuberculin test in excluding tuberculosis in a moderately ill subject appeared to be amply confirmed in the series. Tuberculin tests were performed on 103 of this group; 83 were positive and 20 were reported negative. A check of these 20 seemed particularly interesting. When the test was repeated on nine of the twenty, positive reactions with controlled intradermal injections of graduated doses of bovine and human tuberculin were obtained in eight. One was negative. This left a residue of twelve negative reactions. Of this residue, six negative reactions were recorded shortly before the death of the patient from miliary tuberculosis in five and from carcinomatosis in one. Discarding these, a total of six negative reactions is left in a group of 103 proved cases. Four of these represent Pirquet tests recorded by the house surgeon from seven to ten years ago on patients who could not be reached.

Fig. 3.—Lateral view of specimen shown in figure 2: Marked bone formation and ossification of longitudinal ligaments; soft tissues reflected to the left.

The necessity of not accepting a report of a single dose of tuberculin as a negative report was apparent.

Of all the simple diagnostic aids, a carefully controlled and repeated intradermal tuberculin test, if negative, is of greatest value in excluding tuberculosis.

Experienced pathologists frankly admit their frequent inability to recognize tuberculous tissue grossly, particularly in the early cases that are being submitted to operation in these years. Unless the typical tubercle or caseating focus is visible, the tissue is grossly indistinguishable from that in a half dozen other chronic inflammatory conditions. A frozen section helps as a rule. In the present series, it had not been utilized in many cases. But even with microscopic section, errors [6] may frequently be made. In twelve cases of this series, section of a tissue removed for biopsy failed to reveal the nature of the lesion. "Chronic inflammation" alone could be diagnosed. Inoculation of guinea-pigs, however, demonstrated the organism in each of these twelve cases. Microscopic study alone is not reliable. The isolation of the organism is the only conclusive evidence.

It is small wonder, therefore, that 67.3 per cent of the cases in the clinically undiagnosed group were not labeled tuberculosis by the operators. It remained for section and inoculation of guinea-pigs to demonstrate the etiology in these thirty-seven cases. The ten cases of diaphyseal lesions illustrate the case in point. Operative diagnoses in eight were osteomyelitis (acute or chronic); in one, tumor; in one, osteitis fibrosis cystica.

TABLE 5.—*Operative Recognition of Tuberculous Lesions in Clinically Unrecognized Group (Total Fifty-Five Cases)*

Diagnosis	Cases	
	Number	Per Cent
Tuberculosis corrected at operation	18	22.6
Tuberculosis remained unrecognized at operation	37	67.3

One of these patients was operated on for chronic pyogenic osteomyelitis nine times in twelve years in various hospitals before section and inoculation revealed the true lesion. Another patient underwent four drainages, and a third three "sequestrectomies." Similarly, of the twelve knee lesions in which subsequent study of the tissue corrected the operative diagnosis (table 3), four were called traumatic arthritis, two chronic infectious arthritis, two injury of the semilunar cartilage, one osteochondritis dissecans, three ostearthritis and one chronic synovitis. In each, the failure to find a typical tubercle or area of caseation necrosis was responsible for the mistake.

CONCLUSION

The obvious question appears: How much better diagnosticians would we be if these patients could pass again through our hands for diagnosis? I fear our immediate clinical percentage would not be much better. The clinical pathology of tuberculosis, as syphilis, may mimic too vast a variety of lesions. We would resort at once wherever possible to tissue verification. Inoculation of guinea-pigs, potato culture of aspirated fluid, and section, inoculation and culture of sinus curettings are therefore routine today. The latter material, obtained painlessly without anesthesia, has proved of especial value. When the diagnosis is still in abeyance in suspected joints, biopsy is strongly urged in every possible instance. The tissue selected for examination should be chosen with care at the table and wrapped separately.

6. Deutsch, E.: Wien. klin. Wchnschr. **43**: 1287-1290 (Oct. 3) 1929.

To Hibbs certainly belongs the credit of having maintained that "the methods of diagnosis . . . practiced universally at the time are wholly untrustworthy." Smith and Watters,[7] writing in 1928, remark that "at present no . . . joint is treated for tuberculosis in this clinic (Hibbs) until the diagnosis has been proved either by aspiration and guinea-pig inoculation or by exploratory operation."

The clinician who is timorous enough to assert without pathologic assurance the presence or absence of tuberculosis in atypical instances of disease of the bones, joints or bursae is brave but as like as not to be quite mistaken. The patient who drifts from clinic to clinic seeking in vain a definite diagnosis on which to base treatment soon loses his faith, ends by following no consistent course of treatment, conservative or operative, and does very poorly.

PROPER PLACE OF PHYSICAL THERAPY IN THE TREATMENT OF FRACTURES *

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The treatment of fractures is today an economic problem. End-results are to be estimated in dollars and cents. The criteria by which results are evaluated are residual disability and deformity and the time taken to secure the end-result. The fact that the latter consideration may have an economic significance just as great as, or greater than, the former must be appreciated in outlining the treatment for any fracture.

I am convinced that physical therapy, properly used, can be of great value in minimizing residual disability and deformity and in cutting down the period of treatment necessary to secure an end-result; I am equally convinced that, as generally practiced the country wide today in fractures, it frequently accomplishes neither of these objects but results in increased residual disability and prolongs the time needed to secure the end-result.

The fault lies, as I see it, in a generalized failure to realize (1) what treatment of fracture is intended to do, (2) what physical therapy can and cannot do and (3) what part the patient plays in the treatment. The fault is shared equally by the physicians and the physical therapists to whom they send the patients. The result is commonly the neglect of physical therapy during that stage of treatment when it is most valuable, and the attempt in the later stages to substitute physical therapy for the patient's part in the treatment.

I feel that physical therapy as a method of treatment in fractures can be put on a sound logical basis. One might ignore for the moment the various means of carrying out the treatment and consider what it should do to be of value. How does it fit into the modern conception of treatment of fracture? The ideal treatment of a fracture would embody the immediate anatomic replacement of bone fragments without mental or physical trauma to the patient and the immediate abolition of all pathologic changes in the bone and soft parts without the slightest interference with the usual function of the part or the usual life of the patient. The

7. Smith, A. D., and Watters, W. A.: Tuberculosis of the Hip: End-Results of One Hundred and Fifty Cases, J. A. M. A. **90**: 189-191 (Jan. 21) 1928.

* Read before the New York Physiotherapy Society, April 1, 1931.

problem in each fracture is to approach this unattainable ideal as closely as one can. This is accomplished in general by early reductions under anesthesia, by the employment of a minimum of immobilization for as short a time as possible and by allowing and encouraging the active use of the part within pain limits as soon and as often as possible. The value of these principles of treatment is being more widely appreciated constantly. What is not so widely appreciated is the fact that in the part as a whole there exists an extensive pathologic process: torn and thrombosed vascular and lymphatic channels, lacerated tissues infiltrated by hemorrhage, inflammatory exudate with its cellular constituents, and the transudate of edema from circulatory and lymphatic obstruction. More than that, the organization of such infiltration into tissue is rapid. It is measured in hours and days—not in weeks and months. It can be dispersed while it is exudate, hemorrhage and cellular infiltration, and this is the time to attempt to get rid of it, not after it has become organized and can no longer be dispersed.

How is it to be removed from the part? There is only one mechanism—circulatory. The problem is to restore the circulatory status of the part to normal as soon after injury as possible. How is this to be accomplished? 1. The bone lesion should be treated by early reduction under anesthesia, with a minimum of trauma, and by as inextensive an immobilization as possible in apparatus that will allow of the maximum early active use of the part within pain limits. The following of these principles is responsible for the increasing frequency of the use of traction suspension and operative fixation followed by active mobilization. 2. Appropriate physical therapy should be used from the beginning of treatment. This is the much neglected opportunity for optimal benefit from physical therapy.

Although the vicious practice of waiting for days before reduction for the swelling to go down has been largely and wisely discarded, it is seldom that fifteen minutes or half an hour before reduction is devoted to proper physical therapy, which will greatly reduce the amount of pathologic change, make reduction easier and quiet muscle spasm with its attendant pain and distress; on the other hand, patients often wait an hour for an anesthetist. This is valuable time lost. It is time in which pathologic changes are increasing instead of being diminished.

After reduction, the use of moderate elevation aids circulatory efficiency, but it is here that proper physical therapy can render the part practically free from pathologic changes in a few days. This makes valuable the use of methods of postreduction treatment which allow of ready access to the part.

In cases in which some form of traction suspension is used this is readily attained, but it is as readily attained in many cases in which various forms of splints are applied after reduction. One of my chief objections to the use of circular plaster after reduction is that it frequently shuts off the part from the early use of physical therapy. In fractures of the ankles, wrists, shoulders, knees, hands, feet and elbows it is frequently possible to remove part or all of the splinting carefully, control the position of the fragments and administer appropriate physical therapy once or twice a day, starting on the day of reduction. Even if the part involved cannot be so treated, the rest of the extremity can, and the circulation of the fracture region is thereby benefited.

The more recent researches, clinical and experimental, on the healing of fractures have made it apparent that the question of delayed union and nonunion may be closely related to the circulatory status, not of the bone but of the part as a whole. This adds an important reason for the use of early physical therapy.

What is accomplished by this use of physical therapy? It helps to minimize the chances of delayed union and nonunion. It prevents the organization of scar tissue in muscle and soft parts, about vessels and nerves, in joint capsules and about tendons. It therefore minimizes the amount of functional limitation that has to be dealt with after the bone is healed, and the swelling and pain so common with resumption of function is cut to a minimum because the tissues are soft and supple, and the circulatory disturbance due to scar tissue obstruction and muscle rigidity has been minimized as the infiltration has been carried off before it could organize into tissue. This is not theory. It is a fact that can readily be demonstrated. Under this method of treatment a dislocated or fractured shoulder shows at the end of five days a soft, clear skin, soft, relaxed muscles and freedom from pain and spasm. The saving in time of recovery is marked. The end-result is unquestionably often improved.

What is the appropriate physical therapy for these cases? It is, and should be, of the simplest type: elevation of moderate degree, heat, massage and stimulation of the muscles.

Heat can be employed in any form. I use the therapeutic lamp, diathermy and ordinary light bulbs set up under a cradle. The essential feature is that it shall be of relatively low intensity over a considerable period of time. I feel that this is of great importance. A high intensity of heat, whether from a therapeutic lamp or from diathermy, is injurious and should not be used.

The massage used should be of one type only: a light stroking massage as described by Mennell. It is best described as the type of movement used in gently stroking a cat's back. It should be slow, even, steady, monotonous, always with the same force and in the same direction, lengthwise of the part and in the direction of the venous circulation. Its effect is purely reflex. It relaxes muscle and vasomotor spasm. It does not actually rub anything out of the part. Properly done, it is almost anesthetic to both the part and the patient. It is certainly analgesic.

The muscular stimulation must give a slow rhythmic contraction without spasm. It is difficult to do this with ordinary galvanism or faradism. The Bristow coil is better, the newer Smart coil is better than the Bristow, and an instrument known as the myo-neurostat, which gives a surging, rapidly interrupted galvanism, automatically operating at any given strength, frequency of interruption and rapidity of surge by means of a contained motor, has proved excellent. A sinusoidal surge can give satisfactory results. The purpose is to provide a substitute for active motion when that is not possible, and to augment it when it is possible. It should be painless and not cause spasm. Physical therapy that hurts the patient or produces muscle spasm has no value. It is actually harmful.

After the bone lesion has healed and the part is released from restraint, one is faced with the problem of securing full and painless function of the part. It is here that the value of physical therapy is frequently misconstrued by both physician and physical therapist. The patient comes for his baking, massage, diathermy, static, electrical stimulation or whatever is available, for fifteen or twenty minutes three times a week, and waits for physical therapy to restore function to the part. The idea

that it will do so is firmly implanted in his mind. Physical therapy will never restore function to a part. At this stage it is of value only as an adjuvant, and then only if physician, physical therapist and patient understand it as such. Here lies the peculiar difficulty in the care of fractures. If a man has an acute appendicitis one operates on him and removes his appendix. With the clearing up of the pathologic process he gets well. As a personality he plays relatively little part in the story. In a man who has had a fracture, however, one may achieve a perfect anatomic result and solid bony healing, check all pathologic changes and demonstrate perfect passive function, but if he does not use the part as it was used before the injury all the work has been in vain. The regaining of function is the patient's job, and once he is given the erroneous idea that the physician can regain it for him, the groundwork is laid for prolonged convalescence and impaired end-results. I cannot emphasize this point too strongly. One can make the patient's efforts to regain function more comfortable, one can ease the spasm and pain resultant on overuse and one can aid the circulatory status of the part, but one cannot restore function or circulatory efficiency by physical therapy without normal muscular activity. Active motion within pain limits is the means of regaining function: guided active motion; gently resisted active motion; active motion with the patient's mind concentrated on some useful, purposeful aim, rather than on the actual motion that he is making. This is much better than aimless exercises. Passive motion is a confession of inability to secure active motion. It may infrequently be necessary, but its use is always deplorable. Its use in children may be regarded as a calamity.

One may use what physical therapy one will, then, in the late stages, but it must be understood that the patient is not regaining function by it; one is merely making it easier for him to carry out his job. The only reservation that I should make as to the forms of physical therapy to be employed is that they must cause neither pain nor muscle spasm and that heat must be used in low intensity and for a prolonged time.

Anything that makes it easier for the patient actively to exercise function is good physical therapy if he understands that its sole value to him lies in that help. If he sits by and does nothing but receive physical therapy three times a week for fifteen minutes or half an hour, as thousands of them do every day, his dependence on physical therapy is doing him harm. I believe that it is just as much the physical therapist's as it is the physician's part to implant in the patient's mind the proper valuation of late physical therapy in treatment of fracture. In a way, I feel that it is the physical therapist's job to help educate the physician, who is prone to treat his patients after the splints are off by simply sending them for physical therapy at intervals, as to the real intrinsic value of early physical therapy and the purely secondary rôle of late physical therapy. To do this means the training of physical therapists who are capable of handling the early treatment. There are relatively few of them today.

It is impossible in a short paper to go deeply into the subject of physical therapy. I have tried to present a point of view. It is a point of view that I believe all proponents of the use of physical therapy in fractures will have to espouse if the value of physical therapy in treatment is to receive the support of those who are trying to minimize the economic loss due to fractures. Fractures, industry and "big business" are today closely related. The value of physical therapy has to be reflected in the terms named at the beginning of this paper, not in how pleasant it feels to the patient or how well he can use the part immediately after treatment. I believe that so valuable an adjunct in treatment deserves better application than it gets, and I do not believe this possible without proper understanding of the problem by both physician and physical therapist, proper cooperation between them and the training of therapists qualified to carry out the early treatment.

DECOMPENSATED PORTAL CIRRHOSIS

REPORT OF ONE HUNDRED AND TWELVE CASES *

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CLINICAL FEATURES OF THE ASCITIC STAGE OF CIRRHOSIS OF THE LIVER

BY DR. SNELL

The association of ascites with lesions of the liver seems to have been known since the earliest times and was apparently recognized by Vesalius, Harvey, and Morgagni.[1] One of the first known descriptive drawings of cirrhosis was by John Brown [2] who, in 1685, described a case under the title "A Human Liver Appearing Glandulous to the Eye" (fig. 1). Matthew Baillie [3] gave a good gross description in "Morbid Anatomy," and also noted the frequency of dilated superficial venous channels in the presence of dropsy. Legg [4] called attention to a description of cirrhosis published by John Andree,[5] in 1788, who wrote as follows: "Another kind of indurated and diminished liver which I have also met with, is that in which its surface is raised in half-rounded eminences, appearing like granulations, covered with the proper membrane of the liver. In one of these cases, the particulars of which I have inadvertently lost, the patient died dropsical." Laënnec [6] wrote the first adequate account of portal cirrhosis and gave the disease its name in 1819. Since the publication of Laënnec's description, medical literature has been replete with papers on cirrhosis.

Most of the therapeutic efforts have been directed primarily at relieving the patient of ascites. Purging seems to have been a favorite remedy, but diuretics and diaphoretics were also commonly used. The use of mercury was mentioned by Boerhaave.[7] Ammonium chloride was recommended by Murchison.[8] Copaiba

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* From the Division of Medicine, the Mayo Clinic.

1. Morgagni, J. B.: The Seats and Causes of Diseases, London, A. Millar & T. Cadell, 1769, p. 212.
2. Brown, John: A Human Liver Appearing Glandulous to the Eye, Phil. Tr. Roy. Soc. London **3**: 248 (Dec. 15) 1685.
3. Baillie, Matthew: The Morbid Anatomy of Some of the Most Important Parts of the Human Body, London, W. Bulmer & Co., 1818, p. 228.
4. Legg, J. W.: On Cirrhosis of the Liver, St. Bartholomew's Hosp. Rep. **8**: 74-83, 1872.
5. Andree, John, quoted by Legg (footnote 4).
6. Laënnec, R. T. H.: Traité de l'auscultation médiate et des maladies des poumons et du coeur, Paris, J. S. Claudé, 1826, p. 196.
7. Boerhaave, Herman, quoted by Snell, A. M., and Weir, J. F.: Medical Treatment in Diseases of the Liver and Bile Passages, J. A. M. A. **89**: 1209-1215 (Oct. 8) 1927.
8. Murchison, Charles: Clinical Lectures on Diseases of the Liver, London, Longmans, Green & Co., 1885, p. 138.

resin [9] seems to have been popular at about 1870, and in some cases effective diuresis was obtained by its use. The medical authorities of a half century ago, however, counseled against the use of violent remedies to rid the patient of ascites, principally because of the short duration of life of patients with cirrhotic livers after ascites had once appeared. In short, it was realized that removal of ascitic fluid, by whatever means, had little, if any, effect on the natural course of the disease.

Rowntree, Keith and Barrier,[9] in 1925, reported on the effect of mercurial diuretics, ammonium salts, and a special diet in the treatment of portal cirrhosis and presented some encouraging immediate results. The method and principles of treatment outlined by these writers have been generally approved, and many patients have been treated in accordance with them. Our experience with this method at the Mayo Clinic has extended over a period of more than six years, and enough patients have been treated to permit of its critical appraisal. We have therefore attempted to review the cases of portal cirrhosis with ascites studied at the clinic in the last six years in the hope of learning more about

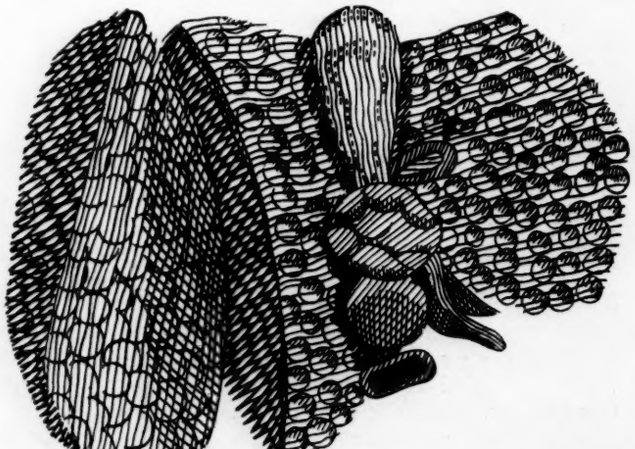

Fig. 1.—A descriptive drawing of cirrhosis of the liver (after John Brown, 1685).

the effectiveness of present therapeutic measures and also of the natural course and prognosis of the disease.

The material selected for study comprises a group of 112 cases chosen from a group of more than 300 in which a diagnosis of portal cirrhosis had been made. In all the cases selected ascites was present, and all had been studied with sufficient care to insure the greatest possible accuracy in diagnosis. Cases in which there were such complicating factors as primary cardiac or renal disease, or chronic peritonitis, were excluded. In all this group, follow-up records were available. In twenty-eight cases necropsy was performed, and in twenty-eight additional cases the diagnosis was confirmed by examination of the liver at operation. We have included in this group a number of cases in which chronic splenic disease, chronic infection of the biliary tract, or visceral syphilis was associated. Although this is perhaps open to criticism, we feel that the ascitic phase of cirrhosis is not necessarily the end stage of a specific process but that it may be due to a variety of diffuse hepatic lesions. We have accepted for study in this group, therefore, cases in which diffuse hepatic interstitial and parenchymal injury, sufficient in extent to cause portal obstruction and ascites, was present without reference to the etiologic factors involved. In every instance in which examination was possible by necropsy or at operation, more or less characteristic pictures of diffuse nodular cirrhosis have been found.

TABLE 1.—*Etiologic Factors in Portal Cirrhosis (One Hundred and Twelve Cases)* *

Alcohol	52
Syphilis:	
Positive history	18
Positive Wassermann reaction	19
Anticomplementary Wassermann reaction	4
History of antisyphilitic treatment	8
Typhoid	18
Cholecystic disease	15
Malaria	12
Arsenic	3
Hyperthyroidism	2

* In many cases, combinations of the factors named were present.

Results of study of the etiologic factors in this group of cases is summarized in table 1. Alcohol, of course, heads the list of possible causes; however, in many of these cases consumption of alcohol was not excessive and may not have been the sole factor in producing hepatic injury. Rowntree's [10] previously reported studies of census figures showed the probable relationship between alcohol and cirrhosis very clearly, and Rolleston and McNee [11] stated that in England and Wales the death rate from cirrhosis fluctuates with that due to alcohol. It may be noted that practically all the known causes of cirrhosis are in themselves preventable. It may also be noted that about half the patients gave histories which included two or more possible etiologic factors.

The symptoms of portal cirrhosis are too well known to require extensive consideration. The significant symptoms in this group are presented in table 2. We have regarded ascites as a critical manifestation and have accepted it as definite evidence of decompensation of the portal circulation. It was present in all the cases included in this series. It had been of sufficient seriousness to require tapping of the abdomen in forty-five of the patients before they registered at the clinic; in about half of this group, tapping had been done on three or more occasions. The disturbance in the general circulation occasioned by the presence of ascites is shown by the high percentage of cases in which there was edema of the lower extremities. Strength and weight suffer early, and in many cases in our series the weight decreased despite the accumulation of fluid. After the mechanical or medicinal removal of ascitic

TABLE 2.—*Symptoms of Decompensated Cirrhosis of the Liver (One Hundred and Twelve Cases)*

Abdominal distention	112
Asthenia	73
Emaciation; loss of weight	62
Flatulence	60
Abdominal pain	57
Jaundice	43
Constipation	41
Diarrhea	32
Gastro-intestinal hemorrhage	20

9. Duffin: Case of Ascites Dependent on Cirrhosis of the Liver, Treated by Copaiba, Lancet **1**: 292-293 (Feb. 27) 1869. Rowntree, L. G.; Keith, N. M., and Barrier, C. W.: Novasurol in the Treatment of Ascites in Hepatic Disease, J. A. M. A. **85**: 1187-1193 (Oct. 17) 1925. Taylor, Frederick: Cases Illustrating the Diuretic Action of the Resin of Copaiba, Guy's Hosp. Rep. **21**: 1-56, 1876. Thompson, Henry: Case of Ascites, Treated with Copaiba, Quinine and Iron, Tr. Clin. Soc. **3**: 26-30, 1870.

10. Rowntree, L. G.: Considerations in Cirrhosis of the Liver, J. A. M. A. **89**: 1590-1597 (Nov. 5) 1927.

11. Rolleston, H. D., and McNee, J. W.: Diseases of the Liver, Gall-Bladder and Bile-Ducts, ed. 3, London, Macmillan Company, 1929.

fluid, this loss of weight becomes more apparent. Disturbances of the gastro-intestinal tract are marked and are evidenced by indigestion, flatulence, constipation or diarrhea. Abdominal pain and discomfort develop in a high percentage of cases because of visceral congestion, abnormal intestinal motility or increased intra-abdominal pressure, alone or in combination. We have attempted a review of the earliest symptoms in this group of cases. More than half the patients gave histories of more or less prolonged indigestion, flatulence and abdominal discomfort before any of the more critical signs of hepatic injury appeared. Such histories often extended over many years and in some cases included associated hepatic enlargement and transient or intermittent jaundice. In one case, hepatic enlargement had been recognized first in 1913, and cirrhosis had first been diagnosed at exploratory operation performed in 1920. In two cases in which operation was done because of hernia, free fluid in the abdominal cavity at the time of operation called attention to the presence of cirrhosis. In one other case there was a history of sudden gastro-intestinal hemorrhage, followed immediately by marked ascites. This was relieved by a single paracentesis, and the patient remained in good health for nearly three years, when a second hemorrhage occurred. Following this episode ascites persisted in spite of vigorous attempts at treatment. Taking the series as a whole,

TABLE 3.—*Physical Signs of Decompensated Cirrhosis of the Liver*

Ascites	112
Edema of lower extremities	83
Enlarged liver	69
Collateral circulation	57
Palpable spleen	49
Hernia	47
Hemorrhoids	46

ascites appeared acutely in about 25 per cent of the cases. An additional 25 per cent of the patients noted weakness and loss of weight as primary symptoms without any gastro-intestinal symptoms or hemorrhage.

The physical signs of cirrhosis are noted in table 3. Collateral circulation is one of the more striking signs of portal cirrhosis, particularly in cases of long duration. Great variations in its extent and distribution have been noted (fig. 2). The classic caput medusa was not encountered in any of our cases. Moderate degrees of hepatic and splenic enlargement are common; the latter was noted in forty-nine cases. Hernia, previously mentioned as an initial symptom, is commonly observed (fig. 3). Jaundice often occurred at the time of the development of ascites. In a few cases more or less chronic icterus, of low grade, was present, as was shown by study of the values for serum bilirubin. In a number of additional cases, jaundice was a late or terminal development and probably was due to an acute degenerative process of the nature of acute yellow atrophy.

On the basis of the symptoms and signs just described, there is usually little difficulty in establishing a diagnosis of portal cirrhosis. Unfortunately, the diagnosis is rarely made until ascites appears. If the diagnosis is doubtful, tests of hepatic function with bromsulphalein will help to narrow the field considerably, since portal cirrhosis with ascites almost invariably gives positive tests. Of eighty-seven cases in which hepatic functional tests were performed, some degree of retention of dye was noted in eighty. The seven cases that gave negative reactions included two cases of cirrhosis in children and two which were complicated by syphilis, for which treatment had been given. The results of hepatic functional tests are remarkably constant in any given case, provided jaundice is not present. In exceptional instances there is reduction in the degree of retention of dye as the patient improves, particularly if the original cause of hepatic injury can be discovered and effectively treated. We have noted moderate reduction in the degree of retention of dye in two cases in which arsenical cirrhosis was present, in certain cases associated with syphilis, and in one case in which the condition followed toxemia of pregnancy. Most patients with retention of dye, graded 3 and 4, do not survive long. The prognostic significance of retention of dye is shown in figure 4.

The grave prognostic significance of ascites in portal cirrhosis has been recognized for half a century, and it is probable that any improvement in the treatment of portal cirrhosis will necessarily come through earlier recognition of hepatic injury. In this connection it is possible that tests of hepatic function with brom-

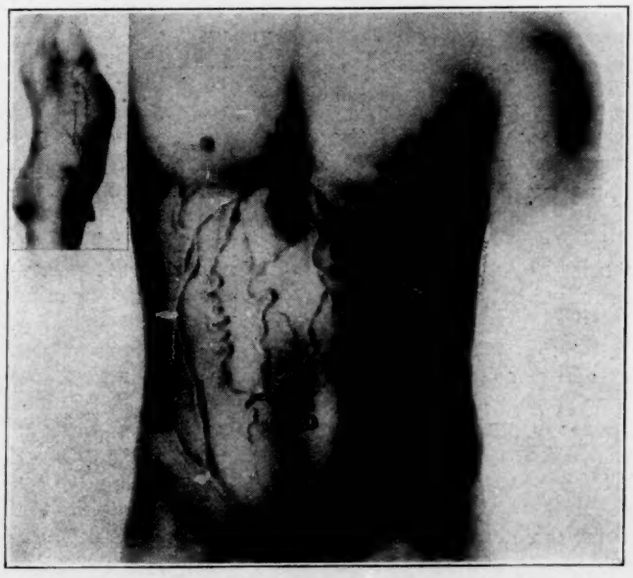

Fig. 2.—Collateral circulation in cirrhosis.

sulphalein will be of considerable value. The preascitic stage of portal cirrhosis is certainly much more common than is generally suspected. Fagge [12] stated that cases of latent portal cirrhosis were about half as frequently seen at necropsy as cases which were clinically recognizable on the basis of signs and symptoms. An attempt to diagnose portal cirrhosis earlier should certainly result in a more satisfactory control of the condition.

Of this group of 112 cases of portal cirrhosis with ascites, 84 were treated along the lines outlined by Rowntree, Keith and Barrier. Most of the patients were given a special diet containing 800 cc. of water and inorganic ions, as follows: sodium, 0.49 Gm.; potassium, 1.76 Gm.; calcium, 0.23 Gm.; magnesium, 0.20 Gm., and chlorine, 0.74 Gm. An additional 800 cc. of water is allowed. Ammonium chloride or ammonium nitrate was given in doses of from 5 to 10 Gm. daily and merbaphen (novasurol) or mersalyl (salyrgan) was given intravenously about every third or fourth day. In some instances purine diuretics, especially metaphyllin, were employed, either conjointly or alter-

12. Fagge, C. H., and Pye-Smith, P. H.: A Text-Book of Medicine, ed. 4, Philadelphia, P. Blakiston's Son & Co., 1901-1902, p. 538.

nately with ammonium salts. Under such treatment, satisfactory diuresis frequently occurs, the ascites diminishes in amount, and there is marked reduction in distention of the superficial abdominal veins. The subjective symptoms of the disease are frequently greatly relieved, and the immediate results of this type of treatment have been surprisingly good. By immediate good results we mean disappearance of ascites and edema, relief of abdominal distress, flatulence, indigestion and the sense of tightness and pressure, together with partial or complete rehabilitation of the patient. It is worthy of special notice that under such conditions the collateral veins disappeared to a greater or lesser degree. This would seem to indicate relief from portal hypertension. It is little short of remarkable to what extent some of these patients improve, yet danger is frequently at hand when least expected, as evidenced in many cases by sudden hemorrhage or by the development of acute hepatic toxemia.

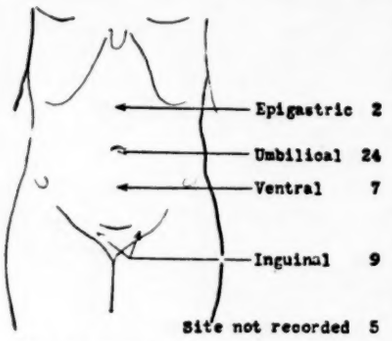

Fig. 3.—Types of hernia observed in 112 cases of decompensated portal cirrhosis. The total number of patients with hernia was 47. Five patients had two hernias and one had three.

The effects of this type of treatment may be summarized by saying that about 80 per cent of the eighty-four patients treated have shown some response to treatment. About 47 per cent obtained excellent results, 32 per cent obtained fairly satisfactory results, and 21 per cent obtained poor results. In spite of the time required for this type of treatment, it is preferred by many patients to paracentesis. It is also apparent that ascites recurs much more slowly after medical treatment than after paracentesis. Mild toxic reactions occurred in about 35 per cent of this group of cases and consisted chiefly of diarrhea, chills, fever and hematuria detectable only on microscopic examination of the urine. In only a few instances were these reactions particularly severe, and in most cases it was possible to carry the treatment through to a successful conclusion in spite of them.

A good deal of care was used in the selection of patients for treatment. If patients were elderly and cachectic, treatment was carried out with great caution and was discontinued if the results were not immediate and satisfactory. In the presence of jaundice we found that diuretics were likely to be ineffective, and usually the patients seemed to be made worse by their use. Persistent gastro-intestinal bleeding also appeared to be a contraindication. Patients with mental disturbances and early signs of hepatic insufficiency were poor subjects for vigorous treatment. In all cases it is desirable to have a frequent estimation of the blood urea and carbon dioxide combining power, because of the danger of uremia or acidosis, which readily occurs in older patients with mild grades of renal insufficiency.

Consideration of the patient's general condition, the duration of ascites, the state of the cardiovascular and renal structures, and knowledge of the degree of retention of bromsulphalein are all useful in the selection of patients for treatment and in the decision as to whether medical treatment is to be continued if results are only moderately satisfactory. It is usually unwise to push treatment of cachectic patients, with high degrees of retention of dye, since good results are obtained only rarely in this group, and in many instances the patient appears to be made definitely worse. A number of the patients in our series were rejected as unsuitable for treatment with diuretics; others responded well at first and later failed under treatment, so that it was discontinued. We have come to regard a poor response to diuretic treatment as indicative of a grave prognosis; if a patient is especially resistant to diuretics, a fatal termination is frequently at hand. Twenty-four of our patients died while under observation, a fact that indicates the advanced condition of many patients with cirrhosis who register at the clinic for treatment. In this group there were no deaths that could be attributed directly to treatment. In fact, most of those who died had not received diuretics of any kind for some time prior to death. Our experience in the treatment of decompensated portal cirrhosis indicates that, if cases are carefully selected, about 50 per cent of the patients will make good response to the treatment described and will receive marked symptomatic benefit from its use. The end-results, as we shall show, are not so satisfactory.

Study of the course of the ascitic stage in the 112 cases suggests that there are four groups of cases which can be distinguished by their reactions to treatment. In the first group there were twenty-four cases, in which there were temporary brilliant results with diuretics, lasting from a few weeks to several years, followed by a gradual decline in the effectiveness of treatment of every kind and finally by death in coma or from other complications.

There were twenty-six cases in the second group, which is characterized by the noneffectiveness of diuretics or of any other measures; the patient enters into a gradual decline which leads to death from coma, hemorrhage or infection. Thus, as previously reported, the ability of the patients to react to diuretics is a sign of prognostic importance, for patients in the group just mentioned have a much shorter duration of life than those in the first group.

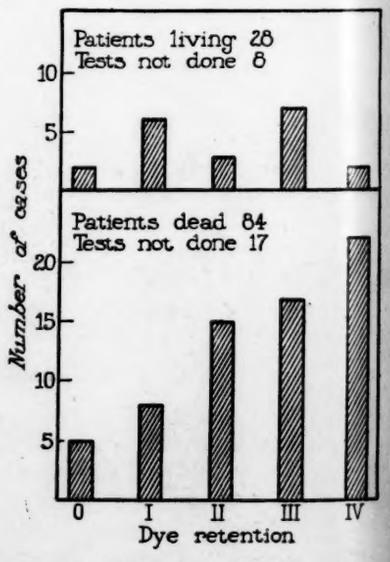

Fig. 4.—Degree of retention of dye in its relation to prognosis.

The third group of cases, which comprised sixteen in this series, is that in which diuretics control and eliminate the ascites, and the patients remain in fairly good health until death from hemorrhage or intercurrent disease supervenes.

The fourth group includes patients still living. There were twenty-eight of these, the majority of whom were in a fair state of health at the last report.

There was an additional miscellaneous group of eighteen patients who could not be classified, for they

died postoperatively or after too short a period of observation to permit classification on the basis of therapeutic results.

THE ULTIMATE PROGNOSIS AND COURSE OF PORTAL CIRRHOSIS

By Dr. Chapman

Of the 112 patients in this series, 84 died and 28 are still living at the time of this report. The circumstances of the death of these patients were as follows: coma without hemorrhage or signs of any infectious process, eighteen; gastro-intestinal hemorrhage, thirteen; infectious processes, eight; coma and infection, seven; coma and hemorrhage, three; postoperative death (including one from surgical hemorrhage, one from infection, and one from infection and coma), six; intestinal obstruction, one; acute dilatation of the heart discovered at necropsy, one, and death after dismissal, from unknown causes, twenty-seven.

Our observations, therefore, corroborate those of many other authors who state that coma, gastro-intestinal hemorrhage and infectious processes are the main causes of death.

Some features of the terminal picture in portal cirrhosis merit especial consideration. The peculiar nervous symptoms of the end stage of hepatic disease have been described frequently. The peculiar delirium and such occasional neurologic features as paralysis of the sixth cranial nerve, palsy of the palate, and a positive Babinski sign have been reviewed by Spence and Ogilvie,[13] who wrote that Bright was one of the first to notice a peculiar type of delirium. Before him, Morgagni quoted previous authors and gave cases illustrating delirium in degenerative diseases of the liver. Rowntree,[14] however, has recently emphasized the peculiar type of coma seen in these cases with decompensated cirrhosis:

> At its onset the patient appears to sleep naturally, although continuously. In this early stage he may be awakened, although he still appears sleepy and stuporous. Later the sleep becomes progressively deeper, so that the patient can no longer be aroused by ordinary methods. The breathing may be normal in rate and rhythm. The patient is relaxed, is flaccid and may be placed in any position. He is neither dyspneic or cyanotic, he looks comfortable, and for a time his appearance is that of a narcotized person or one who is in a normal sleep. Nausea, retching, vomiting, stertorous breathing, Cheyne-Stokes respiration and other symptoms so frequently encountered in uremia may all be lacking. Day after day the patient may continue to sleep until death supervenes. It is the appearance of normal sleep that is so impressive.

The figure that represents the number of patients in this series who died of gastro-intestinal hemorrhage is probably lower than the facts would justify, mainly because we could not get an exact statement as to the cause of death of twenty-seven patients. Some of these probably died of hemorrhage that was not manifested by the vomiting of blood or by tarry stools. In three of our twenty-eight cases in which necropsy was obtained the diagnosis of gastro-intestinal hemorrhage was made only at postmortem examination.

Those patients who died of infections in the course of their disease had, chiefly, erysipelas, pneumonia and peritonitis. The susceptibility of patients with cirrhosis to these diseases, and their association with the end stage of cirrhosis, has been appreciated for many years.

Of the six patients who died postoperatively, the four who died of surgical hemorrhage are particularly significant. They illustrate one of the problems in operating in these cases. The increased collateral circulation, as well as the frequently associated jaundice, tends to increase the risk of bleeding. The two patients of the six who died of infection call to mind the susceptibility of the peritoneum to infection and the lowering of the general bodily resistance. We have not included in this group of surgical deaths those cases in which death was from esophageal hemorrhage in the postoperative period. Such hemorrhage may or may not have been due to manipulation associated with operation. Neither have we included those cases in which death occurred in definite coma; the coma may or may not have been precipitated by operation. It has long been recognized by surgeons that patients in the late stage of cirrhosis are inclined to this complication. Deaths from peritonitis, coma and esophageal hemorrhage, following a few days after simple paracentesis, in this series of cases, were not considered as postoperative deaths.

The duration of life after the onset of ascites has commonly been said to be a few months. The present study shows that such a pessimistic view need not be taken, a fact which may be attributed in part to improved methods of treatment. In this series, at the time this report was completed, the average length of life after the onset of ascites was sixteen months, fourteen months longer than the period often quoted as that given by White.[15] But what is more hopeful is that twenty-eight patients with the clinical picture of decompensated cirrhosis are still living at an average of thirty-eight months after the appearance of ascites. If we do not include three patients, whose condition possibly was of syphilitic origin, and who were living, respectively, twelve, ten and two and three-fourths years after the onset of ascites, the average duration of life of the twenty-five patients was thirty-one and three-fourths months. Still more encouraging is the fact that forty patients in the series lived, or are living, longer than the average period of sixteen months previously noted. These figures contrast with those given in table 4.[16]

Whether any of our patients who are now in good condition can be said to be cured is, of course, open to question. Many authors have published reports of cases in which cure of cirrhosis with ascites is supposed to

TABLE 4.—*Expectancy of Life After Onset of Ascites as Given by Various Authors*

Author	Cases	Average Duration of Life After Onset of Ascites
White [15]	12 paracentesis performed	63 days
	10 paracentesis not performed	2 months
Thacher [16]	7	5 weeks
Ramsbottom [16]	31	188 days
Nissen [16]	26 paracentesis performed	45 days
	25 paracentesis not performed	32 days
Flint [16]	16	5 months

13. Spence, J. C., and Ogilvie, A. G.: Cholaemia: A Clinical Study of Nervous Symptoms in Liver Atrophy, Arch. Dis. Child. **2**: 41-48 (Feb.) 1927.

14. Rowntree, L. G.: Certain Clinical and Terminal Pictures in Hepatic Disease, M. Clin. North America **13**: 1399-1415 (May) 1930.

15. White, W. H.: The Cause and Prognosis of Ascites Due to Alcoholic Cirrhosis of the Liver, to Perihepatitis, and to Chronic Peritonitis, Guy's Hosp. Rep. **49**: 1-42, 1892.

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have resulted. These include cases in which cure has been by operation and other cases in which it has been spontaneous. Table 5 gives this material.[17]

Turner,[18] Mayo,[19] White,[20] Simon,[21] Gibbon and Flick,[22] and Eliot and Colp [23] reported series of cases treated surgically, with various percentages of cure. Some authors, among them Fagge, White and Nissen, have expressed the belief that most of these ascitic cases in which ascites and long life are reported are improperly diagnosed, but postmortem and operative confirmation has been present in some of the cases mentioned in table 5, as well as in a number of our cases.

An intensive study of the forty cases in which patients have lived, or are living, longer than the average brings out some interesting facts. Thirteen of the

TABLE 5.—*Cases Reported by Various Authors in Which Cure is Supposed to Have Resulted* [17]

Author	Cases	Duration of Life After Ascites Disappeared: Years	Duration of Life After Ascites Disappeared: Months	Duration of Life After Last Paracentesis, Years	Comment
Bristowe.....	1	..	6	..	
	1	1	10	..	
	1	..	18	..	
Hawkins.....	1	12	..	..	Hobnail liver at necropsy
Derignac.....	1	5	..	..	
Weber.....	1	8	6	..	
	1	1	3	..	Confirmation at necropsy
	1	4	..	..	Confirmation at necropsy
	1	2	6	..	
Riesman.....	1	9	..	..	
	1	4	6	..	Talma-Morison operation
	1	..	7	..	Talma-Morison operation
Friedenwald..	1	2	..	..	Exploratory operation
	1	6	..	..	Talma-Morison operation
Lichty.....	1	2	..	..	Venous transplant
Millard.....	3	3	..	..	
	1	..	9	..	
Rendu.....	1	5	..	..	
Flint.....	1	..	..	3	
	1	..	..	2	
	1	..	..	11	
	1	..	..	2	
Cheadle*.....	1	1	..	..	
	1	1	..	..	
	1	8	..	..	
	1	5	..	..	
Fiessinger....	5	..	2 to 6	..	Returned for treatment after drinking alcohol
	1	2	..	..	

* Reported thirty-six cases found in literature in which recovery from ascites had taken place.

patients had serologic evidence of syphilis or admitted having had the disease. The prognosis in cases of cirrhosis of the liver associated with syphilis has been considered to be better than in other types of cirrhosis. Two of our patients who have lived ten and twelve years respectively have had syphilis. In one of these cases, early in the course of the disease, retention of bromsulphalein was only slight; later, it was graded 3, which suggested a progressive diffuse process. However, this patient has not had ascites for eight years. The other has not had ascites for twelve years, but he has persistent retention of dye graded 1. In four of these thirteen cases, with possible syphilitic basis for the hepatic lesions, the diagnosis of typical portal cirrhosis has been made at necropsy or at operation. In the other nine of the thirteen cases, the diagnosis was clinically more suggestive of true portal cirrhosis or of diffuse syphilitic hepatitis than of scattered hepatic gummas with hepar lobatum. In two of these long standing cases arsenical poisoning was noted; these cases were previously reported by O'Leary, Snell and Bannick.[24] Elimination of the etiologic factor gives these patients a better outlook, and both were perfectly well at the last report.

It is to be remembered that, although 54 per cent of the 112 patients have died within sixteen months of the onset of ascites, the average length of life of the patients who have died, as well as of those who are still living, is longer than has previously been reported. There is also a fairly large number of patients that apparently have been brought to a state of comfort and usefulness after ascites has been present. Some are still living, and others have died after several years of fairly normal existence; this study, therefore, would seem to favor a more hopeful outlook in portal cirrhosis than has hitherto been taken.

COMMENT

BY DR. ROWNTREE

The discrepancy between the immediate results of treatment of decompensated portal cirrhosis and the end-results is something worth thinking about. In 80 per cent of the cases the diuretic treatment could be tolerated. And yet 75 per cent of the patients died within six years. This means that treatment was inadequate or that it was given at the wrong time. It mattered little whether treatment was medical or surgical. Seventy-five per cent of the patients treated medically died within six years, and those who are living have lived an average of more than three years. Sixty-six per cent of the patients operated on died within six years, and those who are living have lived an average of two years. However, it should be said that many of the patients who underwent either omentopexy or paracentesis resisted medical treatment. Consequently, this group represents those who were suffering from a more severe form of the disease.

As I studied the results of this analysis, an idea occurred to me which I believe sheds light on some of the darkest fields in this problem of cirrhosis. That is, in this group of cases we are not dealing solely with cirrhosis of the liver but with decompensated cirrhosis of the liver. This may be understood best, perhaps, by analogy. In considering statistics on diseases of the heart one invariably wants to know whether they apply to cases in which compensation or decompensation is present. Experience has taught that decompensated cardiac disease is serious. Although immediate results of treatment may be excellent, the end-results, broadly

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18. Turner, G. G.: Personal communication to the authors.

19. Mayo, W. J.: The Surgical Treatment of Hepatic Cirrhoses, Ann. Surg. **80**: 419-424 (Sept.) 1924.

20. White, Sinclair: Discussion on the Surgical Treatment of Ascites Secondary to Vascular Cirrhosis of the Liver, Brit. M. J. **2**: 1287-1296 (Nov. 10) 1906.

21. Simon, M.: Ueber Aszites bei Leberzirrhose, Nord. med. Ark. **50**: 42-162 (Oct.) 1917; abstr. J. A. M. A. **70**: 662 (March 2) 1918.

22. Gibbon, J. H., and Flick, J. B.: The Present Status of Epiplopexy, with the Report of Ten Cases, Ann. Surg. **75**: 449-458 (April) 1922.

23. Eliot, Ellsworth, Jr., and Colp, Ralph: The Operation of Omentopexy in Cirrhosis of the Liver, Surg. Gynec. Obst. **28**: 309-315 (March) 1919.

24. O'Leary, P. A.; Snell, A. M., and Bannick, E. G.: Portal Cirrhosis Associated with Chronic Inorganic Arsenical Poisoning: Report of Two Cases, J. A. M. A. **90**: 1856-1859 (June 9) 1928.

speaking, are not satisfactory. Compensated disease of the heart may not cause serious injury, but once decompensation with edema appears the outlook is infinitely worse. The same may be true of nephritis. Albuminuria may persist for a long time, but, when edema appears, vascular decompensation occurs and the prognosis is grave. This may be true of hypertension, in which vascular disease exists for a long time; but if this becomes associated with anasarca, the end usually is near. In Banti's disease the prognosis is not altogether poor, but when ascites develops it takes on a different aspect. It may be that there is an analogous situation in diseases of the joints and that the large vessels seen around joints with effusion show evidence of collateral circulation. Certainly this conception seems to apply to a disease of the liver in which there is unquestionable evidence of portal hypertension expressed in the collateral circulation. This may persist for a long time, but the outlook becomes much more serious when ascites appears. Following is a revised clinical classification of cirrhosis of the liver:

A. Compensated cirrhosis (with adequate portal circulation).
   1. Portal cirrhosis (large or small liver).
   2. Biliary cirrhosis.
      (*a*) Without extrahepatic biliary obstruction.
      (*b*) With extrahepatic biliary obstruction.

B. Decompensated cirrhosis with ascites (inadequate portal circulation).
   1. Portal cirrhosis (large or small liver).
   2. Biliary cirrhosis.
      (*a*) Without extrahepatic biliary obstruction.
      (*b*) With extrahepatic biliary obstruction.

From the standpoint of diagnosis it becomes necessary to recognize and study these cases earlier. It has been indicated that 112 cases of ascites constitute the basis of this report. If it becomes possible to recognize the earlier forms of cirrhosis, something more may be done for these patients. As an example, a bartender may be considered who at first examination gives a long history of alcoholism and has an enlarged liver and low grade retention of dye. Somewhat later, portal hypertension and collateral circulation appear. This is probably the point at which treatment should be begun rather than when the condition has progressed to the point of ascites and decompensation. Then, as we have shown, treatment may hardly be expected to cure. The outlook should be very different in dealing with compensated cirrhosis instead of decompensated cirrhosis.

In cirrhosis of the liver, treatment should be directed toward prevention of decompensation. In this connection, a diet rich in carbohydrate foods probably is important, with restriction of fluids, meats, extractives and condiments. Alcohol should be avoided. It is possible, of course, that hepatic insufficiency itself is at times a factor in the production of ascites. This is a question that cannot be answered satisfactorily at present for want of exact knowledge. The protein content of the blood unquestionably is significant. This is emphasized sometimes by the sudden development of ascites in cases of cirrhosis of the liver following hemorrhage from esophageal varices. The decreased blood volume is compensated for by an influx of fluid into the blood, a lowering of the protein content, and the rapid onset and development of ascites. Herrick's [25] hypothesis concerning the pathogenesis of ascites in portal cirrhosis has obvious interest. He felt that portal venous pressure is increased in portal cirrhosis because of direct communication of arterial pressure to the portal system through dilated capillaries. He also stated that a larger volume of blood flows through the hepatic artery in proportion to the portal flow in cirrhosis as compared to a normal liver. The communication of the arterial pressure to the portal pressure is the important factor.

However, something more than mechanical factors is concerned, as is evidenced by the marked control of ascites through the use of organic mercurial preparations, which obviously profoundly affects colloidal chemical factors, but, so far as we can see, in no way influences the gross mechanics concerned. Yet, under the influence of merbaphen and of ammonium salts, the ascites may clear up entirely. Portal hypertension decreases, as evidenced by the partial or complete disappearance of the evidences of superficial collateral circulation.

Consideration of the vascular condition is imperative. Here several suggestions might be made. Collateral circulation is desirable in the presence of portal hypertension. Portal hypertension might result from restrictions of the vascular bed, through vasoconstriction, with absolute or relative increase in the supply of portal blood or increase in its viscosity. Griffith and Emery [26] have shown that the blood supply of the liver is controlled by the postganglionic fibers along the hepatoduodenal artery and the preganglionic fibers of the splanchnic nerves. With this knowledge, some new procedure might be devised to combat cirrhosis and portal hypertension through release of sympathetic vasoconstrictors. Another consideration has to do with the volume of blood coming through the liver. This may be controlled by splenectomy, for this may cut off 35 per cent of the supply to the portal vein. Further efforts along the same line have involved ligation of the inferior mesenteric vein [27] and transplantation of the internal saphenous vein into the peritoneal cavity; [28] implantation of blood vessels, silk threads, or rubber or glass tubes into the peritoneal space have also been utilized to afford exit of ascitic fluid to the outside or into the subcutaneous tissues of the abdominal wall from which it may be absorbed.

It is known that omentopexy aims to sidetrack the blood from the portal vein. This is often effective, but we believe that it should be done early in the course of the disease rather than after the development of ascites and decompensation.

Esophageal hemorrhage should be prevented, if possible, by some procedure such as ligation of the left coronary vein, which was tried by Rowntree, Walters and McIndoe.[29] It seems that this ought to be done closer to the portal vein and that other adjacent veins might be ligated also. In discussing this, W. J. Mayo suggested the possibility of inducing thrombosis. With the technic as outlined by Turner,[30] whereby the esophagus may be drawn into the abdomen, thrombosis of these veins might be produced by injection.

25. Herrick, F. C.: An Experimental Study into the Cause of the Increased Portal Pressure in Portal Cirrhosis, J. Exper. Med. **9**: 93-104 (Jan.) 1907.

26. Griffith, F. R., Jr., and Emery, F. E.: Vasomotor Control of Liver Circulation, Am. J. Physiol. **95**: 20-34 (Oct.) 1930.

27. Mayo, W. J.: The Liver and Its Cirrhoses, J. A. M. A. **70**: 1361-1364 (May 11) 1918.

28. Ruotte, quoted by Alesandri, Roberto: Chronic Inflammations of the Liver: Cirrhosis, Nelson Loose-Leaf Living Surgery, New York, Thomas Nelson & Sons **5**: 569, 1928.

29. Rowntree, L. G.; Walters, Waltman; and McIndoe, A. H.: End Result of Tying of the Coronary Vein for Prevention of Hemorrhage from Esophageal Varices, Proc. Staff Meet. Mayo Clin. **4**: 263-264 (Sept. 4) 1929.

30. Turner, G. G.: The Cure of Ascites by Operation, Brit. M. J. **2**: 1296-1297 (Nov. 10) 1906.

Finally, Eck fistula should be considered. This was first done by Vidal [31] in 1903. The patients succumbed four months later. The operation was performed three times by Rosenstein [32] in 1913. About the same time Bogoraz [33] transplanted the cut end of the superior mesenteric vein into the inferior vena cava and reported beneficial results. Krestovsky,[34] in 1926, duplicated the operation of Bogoraz with good results. He chose this type of operation instead of the true Eck fistula because he felt that by doing this he was leaving enough of the portal blood supply intact for the liver to maintain its deaminization and detoxifying functions. In my opinion, this later operation should receive consideration.

Once decompensation has occurred, perhaps present methods of treatment are the best possible under the circumstances. However, as clinicians, we should study the coma that occurs in hepatic insufficiency. Is it coma resulting from failure of the secretory function of the liver, analogous to uremia in disease of the kidney, or is it coma due to specific intoxication due to some intermediate product of metabolism similar to coma in diabetes?

There are three major problems that must be considered: (1) functional grouping of cases of cirrhosis into types with compensation and types with decompensation; (2) earlier diagnosis, and (3) earlier treatment, directed toward prevention and intelligent management and control of ascites and collateral circulation.

HEMOPHILIA AND THE FEMALE SEX HORMONE

PRELIMINARY REPORT *

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CHICAGO

It has long been known that hemophilia exists only in males, while it is transmitted through the female. Although the female may transmit the disease to her sons, she shows no manifestation of the disease. If the female can transmit the disease, she must potentially have the disease and there must be something in the female organism which holds the disease in abeyance. Reasoning on this hypothesis, we treated two subjects having high grade hemophilia by ovarian therapy and ovarian transplant with excellent results.[1]

It has been proved by several investigators that the normal male is not pure male but is part female. It has also been definitely established that the female sex hormone can be isolated from the urine of normal males. As our hemophiliac subjects responded so well to ovarian therapy we thought it might be worth while to test the urine of such persons for the female sex hormone. We are indebted to Dr. Carlson of the University of Chicago for the suggestion of this phase of the work.

We secured 100 white female rats, 2 months of age. Vaginal smears were made every twelve hours for three weeks to ascertain whether they were passing through their normal estrual cycles. Then a laparotomy was performed on each rat under ether anesthesia. The ovaries, broad ligaments and upper part of the cornua of the uterus were removed. The rats were then allowed ten days to recover from the operation. For three weeks following, vaginal smears were made at twelve hour intervals to determine whether the estrual cycles had ceased. Of the 100 rats, 10 were lost. One never developed estrual cycles, one had a family, five died under the anesthetic, and three died after operation.

One liter of urine from untreated hemophiliac patients was used in this series of experiments. The urine, rendered acid to congo red, was extracted three times with benzene in a reflux condenser and evaporated to a syrup. Corn oil was then added and the remainder of the benzene evaporated. This leaves the hormone in the corn oil. (This technic is identical with that of Dr. Petersen of this institution and was adopted in order that we might avail ourselves of his results on normal individuals.)

The rats were divided into groups of four. Three injections of urine extract of 1/6 cc. each were injected at four hour intervals into each of the four rats. Vaginal smears were made at six hour intervals for forty-eight hours. If estrus is induced in three out of four rats, the test is considered positive; that is, it is concluded that the urine extract contains the female sex hormone. Normal controls treated in this way induced from three to five estrual cycles in the four rats.

Five patients with high grade hemophilia have been used in this series. The extracted urine of three patients was used in one series of rats, while that of two patients was injected into two series of rats:

PATIENT 1.—J. S., aged 22 months. No estrual period was induced in any of the eight rats. (A special normal control, J. C., of the same age, was used in this case. Five estrual periods were induced in the four rats.)

PATIENT 2.—J. O., aged 27 months. No estrual periods were induced in any of the eight rats.

PATIENT 3.—W. K., aged 14 years. No estrual period was induced in any of the four rats.

PATIENT 4.—C. L., aged 26 years. No estrual period was induced in any of the four rats.

PATIENT 5.—J. M., aged 40 years. No estrual period was induced in any of the four rats.

Although this series is short, consisting of only five patients, and the number of injections for each patient is small, the results are so consistent that they seem to be significant. From this experiment we conclude that the urine of patients with severe hemophilia is deficient in the female sex hormone. We are continuing the work and are assaying the urine of the twenty-two hemophiliac patients that we now have under observation as well as a series of specimens of urine from transmitters.

NOTE.—Since this article went to press the urine of two transmitters has been found to induce no estrual cycle in the rats. The urine of two more patients with hemophilia also gave negative results.

31. Vidal: Traitement chirurgical des ascites, Presse méd. **2**: 747 (Oct. 24) 1903.
32. Rosenstein, Paul: Ueber die Behandlung der Lebercirrhose durch Anlegung einer Eck'schen Fistel, Arch. f. klin. Chir. **98**: 1082-1092, 1912.
33. Bogoraz, N. A.: La transplantation de la veine mésentere supérieure dans la veine cava inférieure, Med. russe. **2**, 1913.
34. Krestovsky, V. V.: Contribution a l'étude du traitement opératoire des ascites cirrhotiques au moyen d'anastomoses immédiates entre la veine inférieure et la veine porte, Presse méd. **2**: 1398-1400 (Nov. 6) 1926.

* From the Departments of Medicine and Orthopedics, University of Illinois College of Medicine.
* With the technical assistance of Ruth Christensen and Helen Petersen of the Department of Orthopedics.

1. Proc. Soc. Exper. Biol. & Med. **28**, 1931.

Bacteriophage Therapy in Its Infancy.—Bacteriophage therapy is still in its infancy and many studies are still necessary before we shall demonstrate all the results that we may anticipate, but what has already been done in many diseases justifies the belief that this is the specific treatment *par excellence* and that it will attain a wider and wider application.—d'Herelle, Felix: An Address on Bacteriophagy and Recovery from Infectious Diseases, *Canad. M. A. J.*, May, 1931.

Clinical Notes, Suggestions, and New Instruments

FEMORAL ANEURYSM DURING SUBACUTE BACTERIAL ENDOCARDITIS IN CHILDHOOD *

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This case is reported because it is the only one of femoral aneurysm complicating subacute bacterial endocarditis in a child that is reported in the literature.

REPORT OF CASE

A boy, aged 10, was admitted to the Post-Graduate Hospital for tonsillectomy, May 24, 1929, with a history of frequent colds together with tonsillitis during the preceding winter. He had had measles, whooping cough, pneumonia, and appendicitis with appendectomy in 1926. On admission his heart was enlarged, the left border being about one-half inch outside the left nipple. The apex beat was heard in the fifth interspace, and a prolonged blowing systolic murmur was heard throughout the chest but with maximum intensity at the apex. The rate was 80 and regular. A tonsillectomy and adenoidectomy was done May 24, and there was an uneventful recovery.

The child was not seen again until Feb. 20, 1930, when he was readmitted to the hospital and a better history was obtained. The mother was told by a physician that he had heart trouble at the age of 3 years, the child at this time having an acute infection of the upper respiratory tract. Prior to the last admission the child had been in the Irvington Cardiac Home since Oct. 24, 1929. While there, he had a septic temperature of from 102 to 104 F. for from two to three months. The physician at the cardiac home noted signs of a left hemiplegia, Feb. 7, 1930. On the following day he had a severe chill. After that until the day of admission to the Post-Graduate Hospital he complained of pains in his joints and muscles. A purpuric spot on the right ankle was noted three days preceding the last admission.

On admission, the child had an anxious expression. The cervical glands were enlarged. There was marked episternal pulsation. The heart was enlarged to the left and downward with slight enlargement to the right. The left border dulness reached 2 cm. outside the nipple line just between the fifth to sixth interspace. A loud blowing systolic murmur was heard over the entire chest with greatest intensity at the apex and transmitted to the axilla and the back. There was a soft systolic murmur at the apex and pulmonic areas. The second pulmonic sound was loud and snapping. The rate was regular and 100.

The spleen was felt one fingerbreadth below the costal margin and was tender, the liver being two fingerbreadths below the costal margin and also tender.

The abdomen presented a right rectus scar.

There was a complete left hemiplegia with no disturbance in sensation and a marked clonus on the left side.

Severe pain was elicited on moving the right knee and ankle and the left ankle, but no visible redness or swelling was present.

There was a small purpuric spot the size of a dime on the inside right ankle with a small lesion on the top of the right foot.

The treatment outlined was symptomatic, accompanied by the rectal administration of 60 grains (4 Gm.) of sodium salicylate and 45 grains (3 Gm.) of sodium bicarbonate daily.

A diagnosis of subacute bacterial endocarditis with left hemiplegia was made.

The condition remained about the same, the temperature being septic in type until the twelfth hospital day, when pulsation was elicited in the left femoral artery. The left foot was swollen and had one or two small trophic sores over the malleoli. There was a murmur over the left femoral artery with a sound similar to a pistol shot.

The condition then remained about the same until the forty-seventh hospital day, when a small tumor was noted just below the left Poupart ligament. A bruit was distinct. A diagnosis of aneurysm of the femoral artery was made. On the forty-ninth hospital day it had grown to the size of a golfball. On the fifty-sixth hospital day the aneurysm was larger and dissecting and the base broader.

On the sixty-first hospital day Dr. Edward Peterson made a 5 inch longitudinal incision over the center of the aneurysm, isolated the artery above the sac, exposed the artery below the sac, performed an endo-aneurysmorraphy, and removed some fibrin.

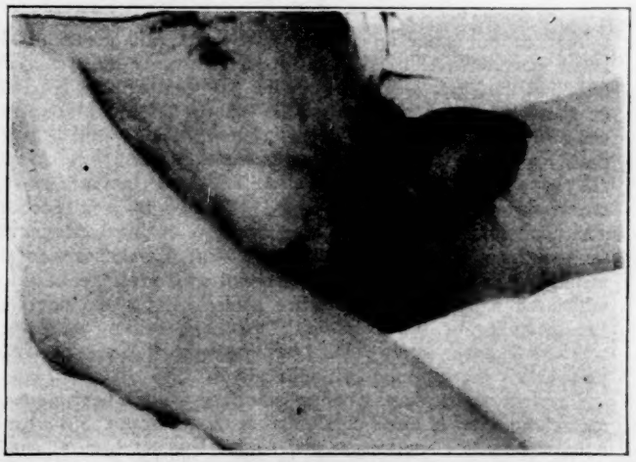
On the sixty-ninth hospital day the condition was poor but the wound was doing well and there was no gangrene.

On the seventy-third hospital day there was much pain in both lower extremities and on the next day Dr. Peterson removed the sutures, the wound being clean but with slight sloughing at the upper part of the wound.

On the eighty-sixth hospital day the child died (May 11).

Throughout the entire hospital stay the child's temperature presented a septic course, ranging from 97 to 105 F. The blood pressure readings ranged from 110 systolic and 0 diastolic to 102/8.

The Wassermann reaction was negative. Blood counts revealed a mild secondary anemia. Seven blood cultures were repeatedly negative until the day before the child died, when one blood culture showed the growth of *Bacillus influenzae*. Examination of the urine was negative except for an occasional positive benzidine test.



Aneurysm painted with iodine to define its size.

With a 325 cc. volume, the urobilin was 35 mg., or 114 gm. per volume, April 5.

The gross pathologic appearance of two specimens of fibrin from the femoral region, taken at operation, April 21, was as follows: One was 55 cm. long and from 10 to 15 mm. wide on the flat. It was from 2 to 3 mm. in thickness. One surface was fairly smooth and the other ragged. The second was 53 mm. long and from 13 to 16 mm. wide on the flat and from 2 to 5 mm. thick. It was similar to the first piece.

Microscopic examination of a section showed a somewhat smooth surface on one side where there was rather dense fibrous tissue containing extravasated blood and a moderate number of nuclei. At a distance of about 0.1 mm. from this surface one came on small blood vessels in the fibrous tissue and there were collections of round cells also. The entire thickness of the fibrous layer was about 1 mm. Beyond this fibrous layer there was fat containing numerous distended blood vessels and in one place a large collection of lymph follicles. Toward one end of the section the fibrous layer, which appeared to be a wall of the blood vessel, was continuous with an organizing thrombus.

The pathologic diagnosis was chronic inflammation of the wall of the blood vessel with thrombosis, apparently an infectious process.

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COMMENT

In reviewing all aneurysms treated in the Johns Hopkins Hospital from its opening until January, 1922, Reid [1] found 142 aneurysms, of which 10 were femoral; of these, none were in children.

Aneurysms occurring in childhood are usually congenital or traumatic.

In an extensive search of the literature I have found no similar one reported in childhood, the only similar one in adult life being reported by Farley and Norris [2] occurring in a woman, aged 23. Undoubtedly this unfortunate complication of bacterial endocarditis has been experienced more times but has not been reported in the literature.

Diagnosis is a relatively simple one and may be made by ordinary examination. Treatment is surgical, essentially the same in children as in adults.

12 East Eleventh Street.

MENINGOCOCCIC PURULENT PERICARDITIS COMPLICATING EPIDEMIC CEREBROSPINAL MENINGITIS

RECOVERY AFTER TREATMENT WITH INTRAPERICARDIAL INJECTIONS OF ANTIMENINGOCOCCUS SERUM *

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Writers on epidemic cerebrospinal meningitis speak of the heart complications of the fatal but fortunately rare endocarditis and the rarer still myocarditis. The pericardium is passed over with silence. Winslow and Shipley [1] studied sixty-two cases of purulent pericarditis bacteriologically; they have found chiefly pneumococci, streptococci and staphylococci, occasionally *B. pyocyaneus* and *B. perfringens*. No mention is made of meningococci, yet Herrick [2] found 12 cases of meningococcic pericarditis in 280 cases of epidemic cerebrospinal meningitis, an incidence of 4.9 per cent. With only one exception the meningococcic pericarditis occurred in very severe cases; and while the mortality of the entire epidemic was 24.8 per cent, the mortality of the cases with the pericarditic complication reached 83.5 per cent. Only two cases of the meningococcic pericarditis were recognized clinically.[2]

Purulent pericarditis, whether resulting from a hematogenous metastatic spread, mere contiguity or direct trauma, is always a most serious complication and so far has not been amenable to medical treatment. Incision and drainage of the pericardial sac is the only procedure of value. In the clinically diagnosed cases of meningococcic pericarditis, Herrick [2] employed intrapericardial injections of Flexner antimeningococcus serum. Both patients recovered.

In the present instance a case of epidemic cerebrospinal meningitis complicated by a purulent meningococcic pericarditis, treated locally, resulted in a complete recovery:

Ira L., a Jewish schoolboy, aged 13, was brought to the hospital, Nov. 27, 1930, in a stuporous condition. Dr. A. S. Kanne, the family physician, gave the following history: The lad had scarlet fever in early childhood, a bilateral mastoidectomy in 1926, but a few months ago diphtheria, followed on the seventh day after the serum treatment by very severe allergic manifestations. The patient was in the best of health till November 25, when he took ill suddenly with a sore throat, headache and vomiting; the temperature rose to 104 F. He felt better on the following day, his headache subsided, and the fever was lower. On the morning of the 27th, he was listless and toward evening he became stuporous.

On examination the boy was found to be well developed and muscular. He was in semicoma, out of which he could be aroused, with a fever of 103 F. rectally, a pulse of 120, and a respiratory rate of 40. The pupils reacted to light and in accommodation. The ears were normal and the throat was injected. The neck was markedly rigid, the Brudzinski sign was slight, and a bilateral Kernig sign was present. Patellar and ankle reflexes were normal and the Babinski reflex was absent. There was no hyperesthesia or rigidity. The spleen was not palpable; rashes were absent. The heart and lungs presented nothing abnormal. The blood pressure was 104 systolic and 64 diastolic. The urine showed a trace of albumin. Blood examination revealed 4,100,000 erythrocytes and 11,850 leukocytes with 90 per cent of polymorphonuclear neutrophils and 10 per cent of lymphocytes. Hemoglobin was 80 per cent (Sahli). Lumbar puncture revealed the spinal fluid under pressure and cloudy; 35 cc. was withdrawn and 30 cc. of antimeningococcus serum given intraspinally. The spinal fluid gave a cell count of 5,440, with 93 per cent polymorphonuclears, a positive Pandy test, and sugar too low for a quantitative determination; in the stained smear were many gram-negative diplococci, having the morphology of meningococci. The blood culture was negative after five and ten days (Dr. Israel Davidson).

Immediately following the puncture the patient brightened up; the pulse and respiration became slower. On the morning of the 28th he vomited; the rigidity of the neck increased, the head retracted, and the legs were drawn up and flexed at the knees. Forty cc. of turbid spinal fluid was withdrawn, 30 cc. of antimeningococcus serum given intraspinally, and 70 cc. of the same serum given intramuscularly and subcutaneously in divided desensitizing doses. Intravenous administration was withheld on account of the severe serum reactions of a few months before. Intraspinal administration of the serum was continued twice daily for three days longer. The lad cleared up mentally; the rigidity of the neck diminished; the spinal fluid was less turbid, contained fewer cells and micro-organisms, and its sugar content was rising. But the temperature continued to rise and the pulse and respirations were rapid and rising too.

November 30, three days after his admission to the hospital and only five days after the onset of the present illness, a faint pericardial friction rub was heard in the fourth left interspace close to the sternum. There was no widening of the cardiac or supracardiac dulness and the heart tones were pure and distinct. A diagnostic paracentesis in the fourth left interspace near the sternum yielded 5 cc. of seropurulent fluid. Fifteen cc. of antimeningococcus serum, previously warmed, was allowed to run into the pericardial sac through the same needle by gravity. The aspirated pericardial fluid showed a preponderance of polymorphonuclear cells and scanty intracellular gram-negative diplococci; the culture was negative. The temperature continued high and the pulse and respirations were hurried. The pericardial rub became harsh, grating, and audible over the entire precordium, to the left and right of the sternum.

December 7, the fever rose to 105, the pulse was 130, and the respirations were 50. The patient was lucid, did not complain of headache, did not vomit, did not cough, and had no pain in the chest. The neck was rigid and the Kernig sign slight. In the lungs bilaterally scanty basal râles were heard but there was no dulness. The heart dulness widened, 5 cm. to the right and 10 cm. to the left of the median line, and presented a bottle-shaped configuration. There was apparently no increase in the supracardiac dulness; the rub was rough and extensive; the apex beat was within the area of the cardiac dulness; the heart tones were distinct; the pulse was rapid but of good quality. Roentgenographically the heart was much enlarged, especially to the left; its outlines were rounded. The electrocardiogram showed left axis deviation and a negative T in lead 1. Paracentesis in the fifth interspace midway between the apical beat and the extreme left cardiac dulness obtained 12 cc. of purulent fluid; the smear showed polymorphonuclears and no micro-organisms. Fifteen cc. of serum was again given intrapericardially. The temperature rapidly began to subside; December 9 it was 100.6 at 8 a. m., rose again to 105.2 at 4 p. m., and by rapid lysis fell to normal by December 14, with a pulse of 90 and a respiratory rate of from 24 to 26.

1. Reid, M. R.: Aneurysms in the Johns Hopkins Hospital: All Cases Treated in Surgical Service from Opening of Hospital to January, 1922, Arch. Surg. **12**: 1-74 (Jan.) 1926.

2. Farley, D. L., and Norris, G. W.: Large Mycotic Aneurysm of the Femoral Artery Developing During the Course of Subacute Infectious Endocarditis Requiring Ligation to Prevent Rupture, Bull. 7, Ayer Clin. Lab. Pennsylvania Hosp., May, 1922, pp. 57-62.

* From the medical service of Mount Sinai Hospital.

1. Winslow, Nathan; and Shipley, A. M.: Pericardiotomy for Pyopericardium, Arch. Surg. **15**: 317 (Sept.) 1927.

2. Herrick, W. W.: Meningococcic Pericarditis, M. Clin. North America **2**: 411 (Sept.) 1918.

Meanwhile, serum was given intraspinally daily till December 10, when the fluid showed 653 cells per cubic centimeter with 70 per cent polymorphonuclears but no diplococci intracellularly or extracellularly. December 18 the spinal fluid was clear, contained 9 cells per cubic centimeter, and smear and culture were negative for micro-organisms. December 3, from fifteen to twenty minutes after the first intrapericardial injection, the patient developed a chill and became anxious and quite dyspneic; this reaction passed off quickly. On the following day he developed severe pain in both elbows and wrists. They were tender but not reddened or edematous; it was considered an allergic arthritis. The blood culture was negative. The joints were immobilized and cleared up within a few days.

The patient kept on improving. December 10 the rigidity of the neck and the Kernig sign were gone. The pericardial rub was last heard, December 15. On the 27th the roentgenogram showed a heart of normal size and configuration and the electrocardiogram was normal again; the left axis deviation and the previously negative T 1 disappeared. December 30, the patient left the hospital. Feb. 15, 1931, he was in excellent health. The heart was normal and showed free mobility to the left and right on lateral change of posture; the electrocardiogram was normal. He returned to school.

SUMMARY

A patient with epidemic meningococcus meningitis developed a purulent meningococcic pericarditis on the fifth day of the illness.

It was treated by aspiration and intrapericardial injections of antimeningococcus serum. The improvement was rapid and the recovery complete.

BROWN-SÉQUARD PARALYSIS FOLLOWING A PARAVERTEBRAL ALCOHOL INJECTION FOR ANGINA PECTORIS *

MATTHEW MOLITCH, M.D., AND GEORGE WILSON, M.D.
PHILADELPHIA

The paravertebral injection method for the treatment of angina pectoris has been made popular by the individual writings of Mandl, Swetlow and White. The object of the method is to inject the sympathetic chain along the upper thoracic vertebrae with procaine hydrochloride or alcohol or with both. The treatment is based on the theory that the pain of angina pectoris is transmitted through the rami communicantes to the spinal nerve roots and thence to the brain, and that the greater part of these painful sensations travel through the upper thoracic roots. A search of the literature has failed to reveal a complication similar to the one that we are reporting.

Although the method of paravertebral injection may appear simple, our case proves that occasionally an unfortunate complication may result, even when performed by an expert. Fluoroscopic examination during the injection would be ideal, and under such conditions unlucky events would be most unlikely.

REPORT OF CASE

A woman, aged 66, white, had had angina pectoris for five years. In May, 1929, a left cervical sympathectomy was done with relief from pain for six months. In March, 1930, a paravertebral alcohol injection of the left upper four thoracic sympathetics was done with a happy outcome, which lasted, however, only three weeks. In May the injection was repeated, with relief for six months. The patient returned for another injection in January, 1931, and following this, although the pain of the angina pectoris disappeared, an incomplete Brown-Séquard paralysis ensued. The method used was as follows: A Labat needle was inserted about 4 cm. to the left of the first thoracic vertebra after local anesthesia with procaine hydrochloride was obtained. The needle was directed inward at right angles to the first rib. When the rib was struck, the needle was withdrawn and its angle changed so as to strike the body of the vertebra, alongside which is found the sympathetic chain. A second needle was similarly introduced at the level of the second rib. While working with the second needle, the operator noticed a drop of fluid escaping from the first needle. About 5 cc. of this fluid was then withdrawn with a syringe and sent to the laboratory for examination and was found to contain myriads of red blood cells. The first needle was withdrawn and then reinserted. At this stage the patient complained of pain in her left arm, this sensation serving as an indication to the surgeon that he is in the neighborhood of the sympathetic chain. Procaine hydrochloride and alcohol were then injected through the two needles with subsequent relief of the angina.

Almost immediately after the insertion of the first needle, the patient complained of a sensation of "cold, running water" in her left lower extremity. She also stated that she felt as if her left leg had opened up and that it had been removed from her body. After the operation it was found that the grip of both hands was weak and that she was unable to perform finer movements with her fingers. On returning to the ward the patient was incontinent of both bladder and bowel. Detailed examination next day revealed that the patient had a flaccid paralysis of the right lower extremity and a diminution of pain, heat and cold sensations on the left side of the body from the second rib downward. This diminution of sensation also involved the inner surface of both upper extremities and included the fourth and fifth fingers. The loss of sensation was also found posteriorly on the left side of the body with a band on the right side about the width of the upper half of the scapula. Touch sensation was diminished from the sixth rib downward on the left side.

From the middle of the left side of the abdomen downward to the middle of the left thigh the patient had an area of dysesthesia, wherein she complained, after being stuck with a pin, of pain referred to the knee and of a sensation of "running water" below her knee. There was no disturbance of recognition of position or passive movement nor of vibration in any part of the body. The right patellar reflex was absent, the left increased. The left plantar reflex was of the flexor type; the right was extensor although not always a typical Babinski. A spinal block did not exist. The patient complained of severe pain in her right lower extremity on deep pressure.

Within two weeks the patient was able to wiggle the toes of her right foot and within six weeks she was able to take a few steps unaided. The sphincter control also gradually returned, but at the time of this writing the patient still complains of difficulty in retaining feces for any period of time. Sensation is normal. The power of the upper extremities is now normal, while the right lower extremity is still weak but it is regaining power daily. The reflexes have returned to normal. The spinal fluid two weeks after the operation was clear and colorless with only two cells per cubic millimeter. No block was found on jugular compression. Both the blood and the spinal Wassermann reactions on repeated examinations were found to be negative.

COMMENT AND CONCLUSION

Although the injection was done on the left side, the neurologic conditions point to a lesion on the right side of the cord involving the crossed pyramidal tract and the spinothalamic pathway. The loss of sensation on the inner sides of both arms and hands is explained by injury to the central part of the cord, thus catching the fibers for pain, heat and cold as they cross. An interesting neurologic observation in this case is the loss of touch on the same side as pain, heat and cold. It has been found by some observers that, whenever touch sensation is disturbed in a Brown-Séquard paralysis, the disturbance is always on the same side as that on which pain, heat and cold is affected. We believe that the needle entered the spinal canal through the intervertebral foramen and actually pierced the spinal cord. The fact that no alcohol was injected explains the rapid improvement. Attempts were made with the same technic plus the use of a dye on six cadavers to ascertain whether it is possible to enter the spinal canal. In only one cadaver was the dye found within the canal, staining the dura and a small part of the cord.

Thirty-Fourth and Pine Streets—133 South Thirty-Sixth Street.

* From the Neurological Department of the University of Pennsylvania School of Medicine and the Neurological Service of the Philadelphia General Hospital.

Committee on Foods

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

DROMEDARY FINEST FLORIDA GRAPEFRUIT

Manufacturer.—The Hills Brothers Company of Florida.

Description.—Canned segments of fully ripened Florida grapefruit packed in sucrose syrup. The grapefruit segments approximate 92.5 per cent and the sucrose syrup 7.5 per cent of the can contents.

Manufacture.—The grapefruits used for the Dromedary product are known as "cannery grade," the ripe sound fruit either too small or too large for the commercial fresh fruit market. Fruit with irregular shape, thick peels and russett peels make up the canning stock. Sound "drops" are also used. These "drops" are of a better quality than many of the so-called packing house culls or off-grade fruit. Only fully matured fruit is used, as slightly immature fruit contains an excess of the glucoside naringin which causes excessive bitterness and also because the acid-sugar ratio is too wide, which gives a sharp acid flavor not present in the ripe fruit.

The grapefruits are washed and sorted free of rots. The good fruits are scalded to loosen the fleshy peel, which is removed by hand. The peeled fruit with part of the adhering white bitter rag is treated with alkali. From 2 to 4 per cent sodium hydroxide solution (82 C.) is sprayed from perforated pipes on the fruit in shallow baskets on a chain drive belt. The fruit remains under the spray for only a few seconds and never for more than sixty seconds even in the early fruit season, when the rag is more difficult to remove. After passing the battery of hot alkali sprays, the fruit is subjected to a series of high pressure water sprays which remove the loosely adhering rag. Cold water is sprayed on the fruit to remove all of the rag and the alkaline solution.

The fruit sections are separated with sharp knives, graded and packed into cans by weight. A 50 per cent sucrose syrup is added and the cans are then exhausted in a hot water bath (81-83 C.) for fifteen minutes. The temperature in the center of the can reaches 54-60 C. After exhaustion the cans are sealed and processed in a hot water bath (76-82 C.) for from twenty-six to thirty minutes. Immediately after processing, the cans are plunged into a cold water bath. The cool cans are label wrapped and boxed.

Chemical Composition.—

(proximate analysis of entire contents of can)	per cent
Moisture (vacuum 70 C.)	85.9
Ash	0.33
Fat (ether extract)	0.1
Protein (N × 6.25)	0.5
Reducing sugars (as invert)	8.1
Sucrose	2.9
Higher carbohydrates as starch (acid hydrolysis method)	2.0
Crude fiber	0.1
Total carbohydrates (by difference) other than crude fiber	12.0
Titratable acidity as citric acid	1.1

Calories.— 0.50 per gram
14.2 per ounce

Micro-Organisms.—The grapefruit is sterile, as determined by nutrient agar plate tests incubated at 37 C. for two days.

Vitamins.—Biologic feeding tests indicate that this canned grapefruit is an excellent source of vitamin C and only slightly less potent than the original raw fruit used.

Claims of Manufacturer.—Dromedary Grapefruit is as delightful as fresh fruit in flavor and texture and is more convenient for use. The nutritional values of the grapefruit are practically unimpaired by the canning, the vitamin C content being only slightly decreased.

SMACO (203) CONCENTRATED LIQUID WHOLE MILK (STERILIZED)

Manufacturer.—S. M. A. Corporation, Cleveland.

Definition.—A canned evaporated milk.

Manufacture.—The milk used in SMACO (203) is collected in accordance with the provisions of the sanitary code of the Cleveland Board of Health. On receipt at the factory the milk is pasteurized by the holding system, by which it is uniformly heated to a temperature of 61-63 C. and uniformly maintained at this temperature for thirty minutes. The milk is cooled forthwith to 7 C. or less.

The pasteurized milk is heated to 93 C., and is run into "vacuum" pans and concentrated to one-half its original volume at 54-60 C. The concentrated milk is homogenized by forcing under high pressure through small apertures, which disperses the fat in fine globules that do not later separate out. The homogenized milk is standardized to conform with the United States Department of Agriculture Standard for evaporated milk.

The standardized milk is filled into cans through small openings which are automatically sealed. The sealed cans are processed at 115 C. for fifteen minutes with a twenty minutes "coming up time." The processed milk is immediately cooled and stored for a definite period for sorting before shipment.

All equipment is kept in a strictly sanitary condition and is thoroughly cleaned after use.

Chemical Composition.—

(proximate analysis)	per cent
Total solids	25.9
Ash	1.5
Fat (ether extract)	7.8
Protein (N × 6.38)	6.6
Lactose	9.5
*p*H	6.5

Calories.— 1.34 per gram
38.1 per ounce

Micro-Organisms.—The product yields no bacterial growth by the standard Methods of Bacteriological Analysis of Milk of the Laboratory Section of the American Public Health Association.

Claims of Manufacturer.—The product is produced exclusively for infant feeding, every precaution being taken to make it wholly adapted to that purpose. It keeps indefinitely in the unopened can.

GRAYSLAKE GELATIN

Manufacturer.—Grayslake Gelatin Company, Grayslake, Ill.

Description.—An unflavored, unsweetened granular gelatin.

Manufacture.—The raw material used in the manufacture of Grayslake Gelatin is the frozen edible fresh skin taken only from animals slaughtered for human consumption. These skins are completely cleaned at the meat packing plants, stamped by inspectors of the U. S. Bureau of Animal Industry as "pure food," frozen in bundles in freezing rooms, and then shipped in refrigerator cars. On receipt at the factory, they are placed in cold storage until used.

The frozen skins are thawed and kneaded under filtered water in tanks by means of rollers. The kneading removes some of the fat and again thoroughly washes the skins. The water is replaced several times. The fat that is worked out in the procedure is removed and the skins are conveyed to aluminum cooking kettles and covered with hot distilled water. The hot water forms and dissolves out the gelatin. The gelatin solution is drawn off and passed through aluminum filter presses into enamel lined storage tanks. All the piping and equipment in contact with the gelatin solution are aluminum, nickel or glass lined. Distilled water is used in the cooking process to avoid the addition of dissolved mineral matter. The gelatin solution obtained from the filter presses is perfectly clear. The temperature in the cooking kettles is carefully controlled.

The filtered gelatin solution is cooled and allowed to fall on an endless rubber belt the speed and inclination of which are regulated to maintain a constant depth of solution. The solution jells, subsequent to which it is cut into pieces, which are automatically placed on drying racks covered with aluminum wire screening. The gelatin is first dried with conditioned

cool air and then with hot air. The dried gelatin is broken into flakes in a crusher and finely granulated in a mill.

Every batch of gelatin is completely tested in the laboratory. All steps in the manufacture are automatically controlled and the product does not at any time come in contact with human hands. The plant is kept in the strictest sanitary condition and all equipment thoroughly cleaned with live steam and boiling water after every operation.

Chemical Composition.—

(proximate analysis)	per cent
Moisture	10.0
Ash	0.3
Fat (ether extract)	0.0
Protein (N × 5.55)	89.7
Carbohydrates	0.0

	parts per million
Arsenic	0.0
Copper	Less than 10
Zinc	Less than 10
Lead	0.0
Sulphur dioxide	0.0
Added preservatives	None

Calories.— 3.59 per gram
102.0 per ounce

Micro-Organisms.—*Bacillus coli,* liquefying bacteria and gas forming bacteria are absent.

Claims of Manufacturer.—A good quality of food-gelatin prepared from the edible skin of government tested animals; recommended for use in normal and restricted diets and in all food-gelatin preparations.

ZIM'S TWIN LOAF BREAD

Manufacturer.—Zimmerman's Bakeries, Incorporated, Hannibal and Mexico, Mo.

Description.—A white bread made by the sponge dough method.

Manufacture.—The sponge dough ingredients, 75 per cent patent flour of Southwestern wheat, water, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate, are mixed in a high speed mixer. The sponge dough is fermented for from four to five hours, after which are added flour, water, salt, dextrose, sweetened condensed skim milk, lard and yeast to make the completed dough, which is cut into pieces of desired weight by machine. The pieces are fermented for a short time, molded by machine into loaf form, and panned. The panned dough is further fermented and then baked for from thirty to thirty-five minutes in a traveling oven with automatic temperature and steam regulation. The cooled loaves are wrapped in wax-paper.

The factory, equipment and storage rooms for the materials used are kept in strictly sanitary condition.

Chemical Composition.—

(proximate analysis)	per cent
Moisture (entire loaf)	34.2
Ash	0.88
Fat (direct extraction with ether)	0.9
Protein (N × 5.7)	8.4
Crude fiber	0.2
Carbohydrates (by difference) other than crude fiber	55.4

Calories.— 2.63 per gram
74.7 per ounce

Claims of Manufacturer.—A bread of good quality.

KEW BEE BREAD (Cole's)

Manufacturer.—Cole Baking Company, Bluefield, and Welch, W. Va.

Description.—A white bread made by the sponge dough method.

Manufacture.—The sponge dough ingredients, short patent flours of Northwest and Southwest wheats, water, yeast, and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate, are mixed in a high speed mixer. The sponge dough is fermented for from four to six hours, after which are added flour, water, salt, sucrose, lard and sweetened condensed skimmed milk to make the completed dough, which is cut into pieces of desired weight by machine. The pieces are fermented for a short time, molded by machine into loaf form and panned. The panned dough is further fermented and then baked for from thirty to thirty-five minutes in a peel-type oven with automatic steam and temperature regulation. The cooled loaves are wrapped in wax-paper.

The factory, equipment and storage rooms for the materials used are kept in strictly sanitary condition.

Chemical Composition.—

(proximate analysis)	per cent
Moisture (entire loaf)	33.9
Ash	0.82
Fat (direct ether extraction method)	1.8
Protein (N × 5.7)	9.2
Crude fiber	0.3
Carbohydrates (by difference) other than crude fiber	54.0

Calories.— 2.69 per gram
76.4 per ounce

Claims of Manufacturer: A bread of good quality.

PRESTO CAKE FLOUR (SELF RISING)
for Cakes, Biscuits and all Pastries

Manufacturer.—Hecker-H-O Company, Inc., Buffalo, N. Y.

Description.—A self-rising flour containing monocalcium acid phosphate, potassium acid tartrate and sodium bicarbonate as leavening agents and salt.

Manufacture.—The flour, sodium bicarbonate and sodium chloride are thoroughly mixed in a flour batch-mixer. The monocalcium acid phosphate and potassium acid tartrate are added and the mixing is continued for a stipulated time. The resulting self-rising flour is packed in cartons by automatic filling machines.

Test biscuits are baked with each batch before packing to assure correctness of proportions and mixture of the ingredients.

Chemical Composition.—

(proximate analysis)	per cent
Moisture	11.2
Ash	3.66
Fat (ether extract)	0.9
Protein (N × 5.7)	8.2
Crude fiber	0.4
Carbohydrates (by difference) other than crude fiber	75.6

Calories.— 3.43 per gram
97.4 per ounce

Claims of Manufacturer.—Presto Cake Flour contains wholesome baking powder leavening and is especially adapted for cakes, biscuits and pastry baking.

SWAN'S WHOLE MILK BREAD

Manufacturer.—Swan Brothers, Inc., Knoxville, Tenn.

Description.—A milk bread made by the sponge dough method.

Manufacture.—The sponge dough ingredients, 80 per cent patent flour Southwest wheat, water, lard, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate are mixed in a high speed mixer. The sponge dough is fermented from four to five hours, after which are added flour, water, salt, sucrose, butter and powdered skim milk to make the completed dough, which is cut into pieces of desired weight by machine. The pieces are fermented for a short time, molded by machine into loaf form and panned. The panned dough is further fermented and then baked from thirty to thirty-five minutes in an oven with automatic temperature and steam regulation. The cooled loaves are wrapped in wax-paper.

The factory, equipment and storage rooms are kept in strictly sanitary condition.

Chemical Composition.—

(proximate analysis)	per cent
Moisture (entire loaf)	34.2
Ash	0.82
Fat (direct extraction with ether)	1.3
Protein (N × 6.25)	8.8
Crude fiber	0.3
Carbohydrates (by difference) other than crude fiber	55.4

Calories.— 2.65 per gram
75.3 per ounce

Claims of Manufacturer.—A milk bread of good quality.

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SATURDAY, JULY 25, 1931

REINFORCED ORAL VACCINES

The historical assumption that the normal intestinal mucosa offers a 100 per cent effective barrier against absorption of bacteria is rapidly giving place to the conviction that gastro-intestinal microbic absorption is probably a normal physiologic function or, at least, a phenomenon that does not necessarily imply a local abnormality or lesion of the mucosa. The parenteral history of gastro-intestinally absorbed micro-organisms thus becomes a problem of normal physiology and is no longer of exclusive interest to pathologists. Arnold and his co-workers [1] of the Illinois State Department of Health report convincing evidence that there is this normal physiologic bacterial absorption and suggestive evidence of a physiologic "cyclic circulation" of bacteria from the intestinal tract, through the systemic blood vessels, with fractional return to the intestinal lumen.

Arnold's experimental evidence was derived from fasting dogs. The abdomens of these animals were opened under ether anesthesia, and suspensions of *B. prodigiosus* were injected into the duodenum. At varying intervals after this injection, blood samples were drawn from the femoral artery and their bacterial content determined by plating methods. Within four minutes, *B. prodigiosus* was demonstrable to the number of 150 in each cubic centimeter of the femoral blood, the number decreasing to about 20 viable micro-organisms per cubic centimeter by the end of twenty minutes. The femoral blood became sterile within forty minutes. To reinforce this normal absorption, control injections were made with the same micro-organisms suspended in raw egg-white. Intraduodenal injections now led to the appearance of 450 viable micro-organisms per cubic centimeter of femoral blood, with 10 micro-organisms per cubic centimeter still demonstrable at the end of fifty minutes. The mechanism of this egg-white acceleration was not determined by the investigators though they were inclined to attribute it to a toxic increase in gastro-intestinal permeability.

To reverse the experiment, bacterial suspensions were injected intravenously and recovery was attempted from the intestinal contents. Within twenty-five minutes after intravenous injection of *B. prodigiosus*, 50 viable micro-organisms per swab culture were demonstrable in the upper half of the small intestine, with rapidly decreasing numbers in the lower portion of the small bowel. The cecum was sterile. By a preliminary injection of egg-white into the upper part of the intestine this rate of "excretion" of circulating micro-organisms into the intestine was accelerated sixty fold, each swab culture now containing 1,200 viable micro-organisms. The metaphorical "cyclic circulation" was demonstrated by combining these two technics, the micro-organisms being introduced into one isolated intestinal loop, and recovery attempted from a second ligated intestinal segment. Test micro-organisms injected into a duodenal loop, for example, were recovered from the jejunum, with duodenal recovery following jejunal injection. The rate of this "cyclic circulation" was increased from four to ten times by a simultaneous injection of raw egg-white.

The test micro-organism was selected on account of its pigment production and resulting ease of identification. This organism is much smaller than the average intestinal bacillus, so that much work must be done before the alleged results are shown to be universally applicable to oral vaccines. That they have a limited application, however, is shown by Arnold's reported success with egg-white-reinforced oral vaccines against typed pneumococci. Young rats were given a preliminary feeding with raw eggs and thirty minutes later were fed typed pneumococci, control tests being made with rats given the same typed vaccine but without the preliminary raw-egg feeding. Five days after oral vaccination each series was titrated for its pneumococcus resistance by intraperitoneal injection with graded doses of virulent pneumococci. The average pneumococcus tolerance of the control vaccination series was 300 minimal lethal doses of the virulent culture. The average for the egg-white-reinforced vaccinations was 75,000 minimal lethal doses, or roughly 250 times the control vaccination success.

Clinicians who plan to study such reinforced oral vaccines must guard against erroneous conclusions from the obsolete assumption that precipitins, agglutinins and other test tube "antibodies" are quantitative indexes of specific immunity. Victor Ross,[2] who has made extensive studies of such vaccines, has shown that neither precipitins nor agglutinins are found in the serum of rats orally immunized against typed pneumococci. In attempted clinical immunizations by the same technic, Ross found that in many cases test-tube "antibodies" are apparently not formed, in spite of the fact that a well developed pneumococcus immunity can be demonstrated by specific serum transfer to mice.

1. Nedzel, A. J., and Arnold, Lloyd: Proc. Soc. Exper. Biol. & Med. **28**: 358 (Jan.) 1931. McDaniels, H. E.: Proc. Soc. Exper. Biol. & Med. **28**: 587 (March) 1931.

2. Ross, Victor: J. Exper. Med. **51**: 585 (April) 1930; Proc. Soc. Exper. Biol. & Med. **28**: 822 (May) 1931.

THE SIGNIFICANCE OF HIPPURIC ACID

Hippuric acid, or benzoyl-glycine, according to the chemist's nomenclature, has been recognized for many years as a constituent of the urine. In fact, more than a century has elapsed since the German chemist Wöhler, in 1824, discovered that benzoic acid introduced into the stomach reappears as hippuric acid. The discovery excited considerable attention in the early days because it was the first synthetic process that was proved to occur in the animal body. Synthetic powers were assumed in former times to be the conspicuous endowment of plants, the animal organism being essentially disintegrative rather than constructive. Years ago Bunge [1] and others pointed out, in their lectures, why the demonstration of such synthetic processes in the animal body aroused the interest of physiologists and chemists. In the first place, Bunge stated, the syntheses referred to were in contradiction to the dominant doctrine of Liebig with regard to the universal contrast between the metabolic processes in plants and in animals; in the second place, the syntheses in animals are an unsolved problem to chemists, although it is the rapid progress in knowledge of the syntheses of organic compounds which constitutes the greatest triumph of modern chemistry. We are already able artificially, Bunge added, to build up, atom for atom, out of their elements, a series of organic compounds, some of a highly complex character. Without doubt all the rest, even the most complex, will be thus produced; it is merely a question of time. Still, this in no way represents the synthetic processes in the living cell, for all artificial syntheses can be achieved only by the application of forces and agents that can never play a part in vital processes, such as extreme pressure, high temperature, strong galvanic currents, concentrated mineral acids, free chlorine—factors that are immediately fatal to a living cell.

Hippuric acid has generally been regarded as having its origin in the kidneys, since the classic experiment of Bunge and Schmiedeberg demonstrating that the excised kidney of the dog when perfused with benzoic acid and glycine produced benzoyl-glycine. The substance is of particular interest owing to the circumstance that it represents, in its formation, one of the chemical methods of defense of the body against otherwise toxic substances. Benzoic acid and related compounds are detoxicated in the organism by conjugation with the readily available amino-acid glycine, often also designated as glycocoll. In some species, benzoic acid is eliminated as glycuronic acid monobenzoate; in man, hippuric acid is the dominant resultant of the protective reaction.

A new interest was injected into the problems of hippuric acid formation soon after the passage of the federal Food and Drugs Act in 1906. The contention had been made that the use of sodium benzoate as a food preservative even in small doses was detrimental to health. The Referee Board of Consulting Experts asserted, on the other hand, that it could not find deleterious effects from moderate doses of benzoate up to 4 Gm. daily. The problem here involved is concerned in part with the ability of the organism to supply glycine or other substances that detoxicate benzoic acid by converting it into less nocuous compounds, to effect the synthesis of these derivatives, and to eliminate the latter effectively.

In a recent study of the effects of benzoic acid, Quick [2] has come to the conclusion that in man, in contrast to some other species, hippuric acid represents the predominant detoxication product. He remarks that while the conjugation of benzoic acid with glycuronic acid is far less important from the quantitative point of view than the conjugation with glycine, it must be recognized that a portion of the benzoic acid can be and is excreted as glycuronic acid monobenzoate and furthermore that this conjugation may be of far greater physiologic importance than the amount excreted would indicate. Quick's experiments indicate a surprising capacity of the organism to effect the hippuric acid synthesis with great speed. The ability of the organism to supply the requisite glycine is also remarkable. Why the organism should possess such an efficient synthetic mechanism, Quick states, is rather difficult to understand. In the newly born the necessity of the body to synthesize glycine is evident, for this substance is needed in large quantities for growth, whereas milk, the sole food of the nursling, contains practically no glycine. It hardly seems probable, however, Quick adds, that this anabolic process has merely been carried over from early life. Glycine undoubtedly plays a more active physiologic part than is generally appreciated. The harm from benzoic acid, when it arises, may depend not primarily on the toxicity of benzoic acid but rather on the diversion of glycine from normal metabolic channels.

The maximum output of benzoic acid as hippuric acid when the body has sufficient glycine varied in three individuals from 1.40 to 1.82 Gm. an hour. The power of the kidney to eliminate hippuric acid may perhaps serve as a valuable test to determine the efficiency of this organ. Instead of determining the rate of excretion as Kingsbury and Swanson have done, a more sensitive index may perhaps be found in the maximum hourly output of hippuric acid, since it appears to be fairly constant in normal persons. Incidentally, it has long been realized that naturally occurring compounds, present in various articles of diet, function like benzoic acid in giving rise to increased outputs of hippuric acid. Blatherwick and Long [3] have found that a man may produce as much as 10 Gm. of hippuric acid after eating 450 Gm. of prunes, and 4.7 Gm. after consuming 305

1. Bunge, G.: Text-Book of Physiological and Pathological Chemistry, Philadelphia, P. Blakiston's Son & Co., 1902.

2. Quick, A. J.: The Conjugation of Benzoic Acid in Man, J. Biol. Chem. **92**: 65 (June) 1931.

3. Blatherwick, N. R., and Long, M. Louisa: J. Biol. Chem. **57**: 815 (Oct.) 1923.

Gm. of cranberries. According to Quick, it is commonly accepted that quinic acid is the substance present in fruit which is responsible for the increased excretion of hippuric acid. The amount of preformed benzoic acid in fruits is too small to account for all the hippuric acid. Blatherwick and Long found only 0.147 and 0.096 per cent, respectively, in prunes and cranberries. The benzoic acid from this source constitutes therefore only 6 per cent of the total amount after eating prunes. Quinic acid has actually been isolated from both prunes and cranberries.

Current Comment

HEALTH, MUSIC AND PROSPERITY

Under the title of Health, Music and Prosperity, a magazine primarily devoted to professional musicians and to the "homes of progressive people where musical culture is looked upon as an indispensable life asset" has distributed a pocket size "normal food chart advocated by noted physicians, food experts and nutritional chemists." This document alleges that

> music has an important bearing upon the health and prosperity of all. Nothing excels music in keeping up the spirits. The tired business man who can come home and spend an hour at the piano keyboard, instead of burning up his energy and initiative with worry, is far better equipped to meet the problems of tomorrow.

This sounds like commendable advice, particularly when it is properly discounted for the mild hyperbole that any enthusiast may be pardoned in expressing with regard to his vocation or to his favorite avocation. However, the admonitions do not end with experiences derived from the domain of music. The chart [1] proceeds with this vigorous reminder: "Make up your mind whether you are to have a starch meal or a protein meal. Never mix the two groups at the same meal." This seems to be a survival of the idea fostered by many food fanatics intimating that "a mixture of certain foods is certain poison." In a discussion of health superstitions, the author [2] has recently indicated how the belief that it is dangerous to eat fish and celery at the same meal is one of the popular food combination ideas, others being that it is dangerous to eat lobster and cream, strawberries and cream, proteins and carbohydrates, pickles and peaches, and indeed all sorts of other combinations, according to individual notions. Our daily bread—the staff of life for countless thousands—is a mixture of proteins and starch. Are we to believe that the "experts" would interdict bread or any of the comparably composed cereals that form the main source of energy for so many of the peoples of the world? According to the musically promoted advice, the idea is "not to mix the foods that produce noncompatible digestive solutions." By way of interpretation we are told that "carbohydrates require an alkaline solution provided by nature for digestion. Meats and acid fruits require a natural acid solution." As a matter of fact, modern biochemists assure us that starch (and sugar) digestion can proceed favorably in a medium that is practically neutral (p_H 7.0); and, of course, any tyro in the subject knows that proteins undergo a series of digestive changes in the alimentary tract, some in the acid medium of the stomach, others in the quite different reactions of the intestine. One might almost suppose, from the musical warning, that nature had made a serious mistake in the organization of our marvelous digestive functions. Nor is this all. We are specifically reminded by the chart that "milk is a protein" and should be consumed with this limitation in mind. What will the dairy industry reply to this oversight of the carbohydrate milk-sugar, which constitutes about one fourth of all the energy in "nature's most nearly perfect food"? Even skimmed milk cannot get away from its constituent lactose. And then there is the warning that fruit salads should be taken only with protein meals. But why go further? There comes the reminder "Shoemaker, stick to your last." Before modern scientific dietetics anybody was entitled to a hearing on the subject of foods. Now scientists realize the special knowledge that is necessary for sound judgment, but quacks exploit the public ignorance and the public's interest.

1. The chart is issued by the Etude Music Magazine, 1712 Chestnut Street, Philadelphia, and is stated to be copied from an article entitled "Physical Revitalization for Musicians," by Jay Media, in the June, 1931, issue of the Etude.
2. Fishbein, Morris: Shattering Health Superstitions, New York, Horace Liveright, Inc., 1930.

THE REMOVAL OF BACTERIA FROM BLOOD

The behavior of bacteria that find their way into the organism presents a large number of problems that have never been satisfactorily solved. This is particularly true of micro-organisms that reach the blood stream whereby they can be transported to almost every part of the body. Within the circulation, bacteria may be confronted with cells endowed with destructive powers. These include not only phagocytes but also the endothelial cells of the vessels. The battle against the invaders may involve immune substances of various sorts: agglutinins that lead to bacterial clumping, and opsonic powers of the serum that cause bacteria to meet with disaster in contact with reticulo-endothelial cells as well as with leukocytes. Bacteria are contributed to the blood from all sorts of foci of infection. How are they removed from the circulation in such cases? It is too early to give a final answer to this engrossing question. It has been alleged that the entrance of bacteria into the blood stream is of itself one of the most harmless of occurrences—far more innocuous than their entrance into cellular tissue or peritoneum. After invasion of the blood there are often smaller numbers of bacteria in the distant, as compared with the local, veins. According to Ottenberg,[1] mere dilution will not ordinarily explain the small number of bacteria found in the general circulation as compared with the number being contributed by foci such as otitis may represent. He believes that bacteria are evidently killed or rapidly filtered from the circulation. Ottenberg's observations on the number of bacteria at any moment in the blood of an artery and a vein of an extremity show that there is little or no filtration of bacteria by the peripheral tissues. Where are the bacteria removed?

1. Ottenberg, Reuben: The Rate and Location of Removal of Bacteria from the Blood in Human Disease, Arch. Path. 11: 766 (May) 1931.

Association News

CONTRIBUTIONS FOR MEMORIAL SALON IN PERSHING HALL

The sum contributed this week to the Pershing Hall Memorial in Paris brings the total to $2,472.10. A list of those who have contributed during the current week follows:

L. D. Heim, M.D., Schuylkill Haven, Pa.
Carl W. Lupo, M.D., Brooklyn.
J. V. Greenebaum, M.D., Cincinnati.
Nelson Rotman, M.D., Dorchester, Mass.

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts at 10 a. m. on Monday and 10:30 a. m. on Saturday over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week is as follows:

July 27. Suggestions for Hot Weather.
August 1. Poverty and Crime.

Five minute health talks may be heard over the Columbia Broadcasting System on Monday, Wednesday, Thursday and Saturday, from 1 to 1:05 p. m., Chicago daylight saving time.

The program for the week is as follows:

July 27. Can Faith Cure Disease? (cont'd).
July 29. Men and Women in Medicine.
July 30. Getting Results From Vacations.
August 1. Convulsions.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Personal.—Dr. Frank G. Granger, Ashford, has been appointed health officer of Houston County, succeeding the late Dr. Russell E. Neff.

Bill Introduced.—H. 786 proposes to levy sales taxes (1) of 10 cents on each article of rubber goods to be used for contraceptive purposes or for the prevention of venereal disease, (2) of $1 on each pessary or douche syringe and (3) of 50 cents per article on all other contraceptive articles. Venders of such articles are to keep a record of each sale made but shall not record the names of the purchasers.

CALIFORNIA

Fined for Narcotic Violation.—Dr. Edgar E. Ewing of Huntington Beach, was recently sentenced to serve 150 days in the county jail and pay a fine of $150 for violation of the state poison act in prescribing narcotics for an addict. The jail sentence and all but $75 of the fine were suspended.

License Revoked.—The superior court of Los Angeles County at a hearing, April 9, affirmed the action of the state board of medical examiners in the revocation of the license of Dr. William I. Kinsley, on charges of narcotic dereliction and illegal operation. It was reported that Kinsley's attorney had served notice of appeal to the district court. The license was revoked by the board, February 4.

Arrangement Between Medical Society and Water Company.—The Los Angeles County Medical Society has made a contract with the Metropolitan Water District of Southern California to furnish medical care to its employees. Under this plan, the district will collect a stated sum each month for medical care from its employees, who in case of illness may choose any member of the Los Angeles County Medical Society to attend them. The society has furnished the water district with a set fee schedule, and the physician will be paid by the district on that basis. The plan will assure medical care for low-wage earners, who otherwise in case of illness might become county charges, it is believed, and will also assure the physician of compensation in caring for such cases.

Society News.—Dr. Attilio S. Musante, San Francisco, was elected president, and Dr. Emile D. Torre, secretary-treasurer, of the American-Italian Medico-Chirurgical Society, organized, June 25, in San Francisco.——The Northern District Eye, Ear, Nose and Throat Society, Stockton, was addressed, June 9, by Dr. Charles A. Broaddus, among others, on "Zinc Ionization Treatment of Chronic Suppurative Middle Ear."——Drs. Dohrmann K. Pischel and Harold A. Fletcher, San Francisco, read papers on "Strabismus from the Standpoint of General Medicine" and "Nasal Sinus Disease from the Standpoint of General Medicine," respectively, before the San Joaquin County Medical Society, May 7, in Stockton.——Among the speakers before the San Bernardino County Medical Society, Patton, June 2, were Drs. Franklin H. Garrett, Patton, on "Treatment of Paresis and Allied Conditions" and Frank F. Williams, Jr., "Dementia Praecox and Schizophrenia."

State Medical Library Established.—A bill authorizing the establishment of a state medical library under the control of the University of California was signed by Gov. James Rolph, Jr., June 9, and will become operative, September 9. Branches will be maintained in Los Angeles and San Francisco and will include exhibits as well as books and periodicals. A package library service on books and periodicals will be one of the chief functions of the library. A state medical library advisory board was also created by the bill, to be made up of the president of the University of California, the president of the state board of health, the dean of the medical school of the university at San Francisco and the dean of the Los Angeles medical department of the University of California at Los Angeles, all acting ex officio. Maintenance of the library is to come principally from appropriation of "all unencumbered moneys in the board of medical examiners' contingent fund in excess of $130,000."

DELAWARE

University News.—Dr. Charles M. Wharton, assistant professor in the department of physical education, University of Pennsylvania, has been appointed head of the recently formed department of physical education in the University of Delaware.

Society News.—Dr. Edward Weiss, Philadelphia, spoke on "The Classification of Nephritis from a Pathological Standpoint" at the meeting of the Sussex County Medical Society, May 14, in Georgetown.

FLORIDA

Bills Introduced.—H. 27 proposes to levy an annual occupational tax of $25 on practitioners of medicine, osteopathy, chiropractic, podiatry, chiropody and dentistry. H. 144 proposes to make the incurable insanity of one spouse for four years preceding the filing of the bill of complaint a ground for divorce.

GEORGIA

University News.—A four-day graduate course for Negro physicians will be given at Emory University, August 24-28, through the cooperation of the university, the state board of health, the Rosenwald Fund and Dr. James R. McCord, professor of obstetrics and gynecology.

Health in Atlanta.—Telegraphic reports from the U. S. Department of Commerce from eighty-two cities with a population of 36 million, for the week ended July 11, indicate that the highest mortality rate appears for Atlanta, 18.6, and the rate for the group of cities as a whole, 10.8. The mortality rate for Atlanta for the corresponding period last year was 16.9 and for the group of cities, 11. The annual rate for the eighty-two cities for the twenty-eight weeks of 1931 was 12.9, as compared with a rate of 12.7 for the corresponding weeks of 1930. Caution should be used in the interpretation of the figures presented, as some cities are hospital centers for large areas outside the city limits, as Negro death rates are usually high and as weekly figures always fluctuate widely.

Dentists Oppose Abolition of Board of Health.—Members of the Georgia State Dental Society at a special meeting, July 10, in Atlanta, adopted unanimously a resolution opposing a bill, pending in the legislature, by which a state department of health with a director at its head would be substituted for the present state board of health. Under the terms of the bill, a director of health would be appointed by the governor for a term concurrent with that of the governor, the state board of health would be abolished, and its functions would be transferred to the proposed "department of health." The dentists assert in their resolution that such a reorganization would nullify the work done by the state board of health; that it would place the health activity of the state in the hands of politicians; that it would destroy the incentive of physicians and dentists interested

in the physical welfare of the state; that it would take the control of the affairs of the department of health out of the hands of physicians and place or pave the way for placing in leadership a layman as director of health, and it would undermine the confidence that the state board of health enjoys with the citizens of Georgia.

Society News.—Mr. Grover Middlebrooks, among others, addressed the Fulton County Medical Society, Atlanta, July 2, on "Obligations of the Doctor to His Patients and the Courts."——A symposium on the endocrine glands was given before the Fourth District Medical Society, Warm Springs, May 28, by Drs. James A. Wood, Floyd W. McRae, Jr., Trimble C. Johnson, Thomas L. Byrd, James K. Fancher and Edgar H. Greene, Atlanta, and Major Samuel A. White, Fort Benning.——Dr. Gordon T. Crozier, Valdosta, among others, spoke on malaria control before the Lowndes County Medical Society, Valdosta, June 9.——Dr. Guy Chappell, Dawson, read a paper on "Treatment of Eclampsia" before a joint meeting of the Terrell and Randolph county medical societies, June 5.——The Sixth District Medical Society met, June 24, at Indian Springs. The following papers were read by Macon physicians: "Ectopic Gestation, Approaching Term," Dr. William W. Baxley; "Health Work in Schools," Dr. Charles L. Ridley; "Esophageal Obstruction," Dr. Alpheus M. Phillips; "Dangers of Delay in Duodenal Ulcers," Dr. Charles C. Harrold; "Chronic Purulent Otitis Media," Dr. James Allen Smith, Jr.; "Diagnosis and Treatment of Cardiac Arrythmias," Dr. Thomas E. Rogers.

INDIANA

Society News.—Dr. LaRue D. Carter, Indianapolis, spoke on "Muscular Dystrophy" before the Jay County Medical Society, July 2.——Dr. Homer H. Wheeler, Indianapolis, addressed the Hendricks County Medical Society, North Salem, June 19, on "Rectum and Colon."

State Health Board Reorganized.—Dr. Thomas W. Oberlin, Hammond, was elected president of the state board of health for two years at a reorganization meeting, July 2, succeeding Dr. Amos J. Hostetler, La Grange. Dr. Angus C. McDonald, Warsaw, was elected vice president for two years, and Dr. William F. King, Indianapolis, reelected secretary for four years.

Personal.—Dr. William R. Simmons, medical superintendent of the Wabash Valley Sanitarium, Lafayette, has resigned because of ill health. Dr. Thomas E. Ward has been made medical superintendent and Dr. Vivion F. Shull, medical director.——Dr. Harry G. Erwin, La Grange, has been appointed health officer of La Grange County, succeeding Dr. Frank J. Kendrick, resigned.

Child Health Conference.—The northern Indiana White House Conference on Child Health and Welfare and the Child Health Institute of the state board of health met jointly, July 6-11, at Winona Lake. The first three days were devoted to the examination of preschool children. Among the speakers were Lewis H. Carris, New York, director of the National Society for the Prevention of Blindness, on "Preventive Measures"; Dr. John Sundwall, Ann Arbor, Mich., "Problems of Child Health Conservation;" Dr. Harold S. Hulbert, Chicago, "Mental and Behavior Problems"; Dr. Ernest R. Carlo, Fort Wayne, "Prevention of Orthopedic Defects"; Dr. Ralph S. Chappell, Indianapolis, "Prevention of Deafness"; Dr. Cecil P. Clark, Indianapolis, "Prevention of Vision Defects"; Louis P. Harshman, Fort Wayne, "Behavior and Prevention of Mental Handicaps"; Fred R. Houck, D.D.S., Huntington, "The Five Year Dental Program"; Dr. Angus C. McDonald, Warsaw, "Public Health Problems of the Physician"; Dr. Ada E. Schweitzer, Indianapolis, "Milestones in Maternal and Infant Protection"; Dr. Milo K. Miller, South Bend, "Medical Service to the Child," and Dr. William F. King, Indianapolis, "An Administrative Health Program."

KANSAS

Society News.—The Wyandotte County Medical Society was addressed, May 19, by Drs. Clifford J. Mullen, Kansas City, Mo., and Charles Omer West, Kansas City, Kan., on "Ocular Causes of Headaches" and "Epidermophytosis," respectively.——Dr. Clarence H. Kinnaman, Topeka, among others, spoke on "Treatment and Prevention of Diphtheria" before the Sumner County Medical Society, Wellington, June 18, and Dr. J. C. Carroll Montgomery, Topeka, on full time health protection.——The Central Kansas Medical Society and the Golden Belt Medical Society had a joint meeting, July 2, at Hays, with papers read by Drs. Harvey P. Boughnou, Kansas City, Mo., on "Acute Respiratory Infections" and Earl G. Padfield, Salina, "Congenital Hypertrophic Pyloric Stenosis."——Dr. Laurence P. Engel, Kansas City, read a paper on "Preoperative and Postoperative Care of Surgical Patients" and Dr. Frank R. Teachenor on "Diagnosis and Treatment of Head Injuries" before the Franklin County Medical Society, May 27, in the new Ransom Memorial Hospital, Ottawa, with the Douglas, Miami, Anderson, Allen and Osage county societies as guests. The meeting, June 24, was held in the new State Hospital, Osawatomie. Dr. Harry R. Wahl, Kansas City, among others, gave an illustrated lecture on "Pathology of the Gallbladder."——The Bourbon County Medical Society was addressed, May 18, among others, by three Kansas City physicians, Drs. Eugene P. Hamilton, "Diagnosis and Surgical Treatment of Gallbladder and Liver Diseases"; Oscar F. Bradford, "Pediatrics of the Summer Months," and Henry E. Thomason, "Sinus Infection."

LOUISIANA

Hospital News.—A new tuberculosis hospital, with a capacity of 100 beds, has been completed at Gentilly at a cost of $200,000.

Personal.—Dr. George Herrmann, associate professor of medicine in the Tulane University of Louisiana School of Medicine for the past six years and director of the heart station at Charity Hospital, has been appointed associate professor of medicine in the University of Texas Medical School, it is reported. Dr. William H. Perkins, director of preventive medicine in Tulane University of Louisiana School of Medicine, was also recently appointed professor of preventive medicine.

Society News.—The Orleans Parish Medical Society was addressed, May 25, by Drs. Ambrose H. Storck on "Formation of Arteriovenous Fistula Between the Common Carotid Artery and the Internal Jugular Vein, for Relief of Sequelae of Aortic Aneurysm"; Earl Hyman, "Painful Feet," and Urban Maes, "Practical Consideration in the Reduction of the Cancer Mortality." A memorial meeting honoring the late Dr. Frederick Loeber was held by the society, June 22. Among the speakers were Drs. Albert E. Fossier on "Frederick Loeber, 1839-1901"; Otto Joachim, "Some Memories of Dr. Loeber"; Paul A. McIlhenny, "Chaulmoogra Oil in the Treatment of Arthritis" and Joseph A. Danna, "What Surgery Can Do in Saving a Certain Group of Cases of Pulmonary Tuberculosis."——The Tangipahoa Parish Medical Society, Hammond, at a recent meeting was addressed by Drs. Gilbert C. Anderson, New Orleans, on "Brain Injuries" and Thomas B. Sellers, New Orleans, "Office Management of Gynecological Patients."——Dr. Charles J. Bloom, New Orleans, spoke on "Appendicitis in Children" before the St. Tammany Parish Medical Society, Slidell, June 12.——A New Orleans chapter of the Pan American Medical Association was organized, May 7, with thirty-five charter members. Officers are: Drs. Aristides Agramonte, president; Peter F. Murphy, vice president; Joseph Rigney D'Aunoy, New Orleans, secretary, and Gilbert C. Anderson, treasurer.——Dr. Alfred D. Tisdale, Monroe, among others, read a paper on "Inguinal Hernia" before the Ouachita Parish Medical Society, May 7, in Monroe.

MARYLAND

Personal.—Dr. William Henry Howell, who recently retired as director of the Johns Hopkins University School of Hygiene and Public Health, has accepted the chairmanship of the medical section of the National Research Council.——Dr. Thomas F. White has been appointed health officer at large for Baltimore City, succeeding Dr. Ferdinand O. W. Reinhard, who is now director of communicable diseases (THE JOURNAL, July 11, p. 108).——Dr. Stephen D'Irsay, associate in the history of medicine, Johns Hopkins University School of Medicine, has resigned.

MASSACHUSETTS

Personal.—Dr. Halbert G. Stetson, Greenfield, newly elected president of the Massachusetts Medical Society, was honored at a testimonial dinner, June 24, in Greenfield, sponsored by the Franklin District Medical Society. Dr. Robert B. Greenough, Boston, retiring president, presented Dr. Stetson with a gavel made from a piece of the famous Washington Elm, Cambridge.

Cancer Clinic and Meeting.—The Plymouth District Medical Society held a special meeting on cancer, June 11, in Brockton, following an afternoon cancer clinic. The speakers were Drs. Burton J. Lee, New York, on "Diagnosis and Treatment"; Channing C. Simmons, Boston, "Cancer of the Oral Cavity"; Joe V. Meigs, Boston, "The Gynecologist and Cancer"; Richard Dresser, Boston, "The Radiologist and Cancer" and George H. Bigelow, Boston, on the work of the state board of health for cancer sufferers.

MISSISSIPPI

Child Health Conference.—The Mississippi follow-up of the White House Conference on Child Health and Protection was held, June 26-27, in Jackson. Sections on education and training, the handicapped child and medical service convened. Among the speakers were Harry E. Barnard, Ph.D., Indianapolis, director of the White House Conference, on "History and Purpose of the White House Conference on Child Health and Protection"; Drs. Harvey F. Garrison and Frank H. Hagaman, Jackson, "Medical Care of Handicapped Children"; James R. McCord, Atlanta, Ga., "Prenatal and Maternal Care" and Robert A. Strong, New Orleans, La., "Growth and Development."

Society News.—The Northeast Mississippi Thirteen County Medical Society held its quarterly meeting, June 16, in Houlka. Among the speakers were Drs. Percy W. Toombs, Memphis, Tenn., on "Dystocia With Special Reference to the Occiput Posterior" and Lucien C. Feemster, Jr., Tupelo, "Ureteral Strictures."——The East Mississippi Medical Society, Philadelphia, was addressed, June 18, at Philadelphia, by Drs. Roland W. Hall, Jackson, on "Present Understanding and Limitations of the Term Eczema," and Henry G. Rudner, Memphis, Tenn., "Symptoms of Colon Infection."——Dr. William A. Dearman, Gulfport, read a paper on "Infectious Mononucleosis" before the Harrison-Stone-Hancock Counties Medical Society, Gulfport, July 1.

NEW JERSEY

Proprietary Names for Well Known Drugs Opposed.—A resolution deprecating the introduction of well known drugs under proprietary names, said to be a growing practice among pharmaceutical manufacturers, was adopted by the New Jersey Pharmaceutical Association at a convention in Atlantic City, June 16-19. The pharmacists pointed out that these preparations contained ingredients of known and definite standards, which any pharmacist is capable of compounding. Because presentation of such products in easily identified packages increases the tendency to self medication on the part of the public, and because their use by the medical profession is accepted as an unqualified endorsement, the resolution further deprecates the practice on the part of physicians of "prescribing, recommending and fostering the use of such preparations under proprietary names."

NEW YORK

Personal.—Frederick Rand Rogers, Ph.D., director of the health and education division of the state education department for the last five years, has resigned to become dean of student health and physical education at Boston University.

New York City

Society News.—Dr. John Osborn Polak, who died, June 29, bequeathed to the Kings County Medical Society, Brooklyn, his medical library and a cash gift of $5,000.——The committee on street and outdoor cleanliness of the New York Academy of Medicine protested to the department of sanitation, June 29, on the neglected condition of the streets. Dr. Bernard Sachs, chairman, urged the department to issue orders that garbage cans be covered and to provide enclosed trucks for garbage removal. The committee favors the creation of a sanitary squad to prevent littering of the street, with fines imposed on offenders.

Seventy-Eight Fountain Owners Summoned.—The "fountain squad" of the division of food and drugs, New York department of health, served seventy-eight summonses on proprietors of soda fountains and lunch counters in beach resorts and city parks during the fortnight ended July 13, according to a report of the health department. The squad seized more than sixty samples of food and drink for analysis, and inspectors of the division seized over ten tons of unwholesome candy during a recent census of food and drug establishments of the city. The census, which was made as a precaution against violations of the sanitary code during the resort season, reveals the existence of 91,345 wholesale and retail food and drug establishments and 174,229 dairies, pasteurizing plants and creameries in the city, all under the supervision of the bureau of food and drugs. The majority of the law violators have been fined, while a few cases were held over.

Flat Fee for Consultation Service at Mount Sinai.—A diagnostic service for persons of moderate means, limited to those referred by their personal physicians, will be established at Mount Sinai Hospital in the fall. The economic level of eligibility is to be a maximum income of $2,400 a year for an unmarried person and $4,000 for a total family income. A flat fee of $35 will be charged to all patients, regardless of the nature of their illness or the number of consultations or laboratory examinations that may be required, according to the tentative plans. The hospital obligates itself not to derive any profit from the project. Patients will be accepted only when referred by private physicians and the work will be limited to diagnosis. When the clinical investigation is completed, the patient will be turned back to the referring physician with as complete a diagnosis as possible and detailed suggestions as to treatment. The service will be continued and expanded only if it proves to have justified its existence by the end of the first year and to have been adequately utilized by physicians for the persons it is designed to serve.

Chiropractor Werner Sentenced.—William H. Werner, president of the so-called American Bureau of Chiropractic, was convicted in the Court of Special Sessions at Queens, May 5, of violating the medical practice act of the state. He was sentenced to six months in the workhouse. Werner seemed to be suffering from amnesia while he was on the witness stand. On the advice of his counsel, Werner repeatedly refused to answer questions on the ground that they tended to incriminate him. When the court finally told him that if he refused to answer he would be cited for contempt, he developed loss of memory. It appears from the report of the trial that he could not recall the address of his office or the number of his telephone; he failed to remember when he became a chiropractor or when he was graduated; he could not even fix the date of the World War, was unable to say whether he ever recommended x-ray pictures, could not identify his own signature, recognize his own stationery, and apparently failed to recall a single statement he had made in a previous trial. Werner's chiropractic practice was estimated to bring him in approximately $70,000 a year.

NORTH CAROLINA

Personal.—Dr. Charles S. Grayson, High Point, was recently elected mayor of that city.——Dr. Harold W. Glascock, Raleigh, was elected president of the North Carolina Hospital Association at a joint meeting with the associations of South Carolina and Virginia, Durham, May 19-21.

State Board of Health Reorganized.—The state board of health has recently been reorganized, as provided by the last general assembly. The following members were appointed by the governor: Dr. John T. Burrus, High Point; J. N. Johnson, D.D.S., Goldsboro; J. A. Goode, Ph.G., Asheville; Dr. Hiram Lee Large, Rocky Mount, and Herman G. Baity, Sc.D., Chapel Hill. The following members were elected by the Medical Society of the State of North Carolina: Drs. James M. Parrott, Kinston; Carl V. Reynolds, Asheville; Leslie B. Evans, Windsor, and Sylvester D. Craig, Winston-Salem. At the first meeting, Dr. Burrus was elected president, Dr. Reynolds, vice president and Dr. Parrott, secretary and state health officer (THE JOURNAL, July 11, p. 38). Following Dr. Parrott's appointment as health officer, Dr. George Grady Dixon, Ayden, was appointed to succeed him on the board.

OHIO

Society News.—Dr. Chauncey W. Wyckoff, Cleveland, spoke on "Common Difficulties of Infant Feeding" before the Portage County Medical Society, July 2, in Mantua.——Dr. John E. Greiwe, Cincinnati, gave an illustrated lecture on "The Influence of the Peripheral Circulation" before the Darke County Medical Society, May 8, in Greenville.——Dr. Arthur G. Helmick, Columbus, among others, spoke before the Marion Academy of Medicine, May 5, on gastro-intestinal disturbances in infancy.——Dr. Milton B. Cohen, Cleveland, among others, spoke on "Medical Economics" before the Lorain County Medical Society, in Oberlin, June 12.——The Medina County Medical Society was addressed, May 21, in Medina by Dr. William E. Hart, Elyria, on "Problems of the County Medical Society."——The speaker before the Athens County Medical Society, May 4, in Nelsonville, was Dr. Roscoe R. Kahle, Columbus, on abdominal surgery.——The Mercer County Medical Society members met as guests of Drs. Preston W. Fishbaugh, Mendon, and Morton Byron Fishbaugh, May 19, in Celina. Dr. Thomas R. Thomas, Lima, spoke on "Diseases of the Gallbladder."——Dr. Gilbert Fitz-Patrick, Chicago, spoke on cancer at an opening meeting of the Van Wert County Medical Society, June 2, in connection with the showing of the Canti cancer film.——The Miami and Shelby County societies had their eighty-fourth semiannual joint meeting, June 4, with addresses by Drs. Mathias A. Wagner, Toledo, on "Infantile Intestinal Conditions" and Walter M. Simpson, Dayton, "Recent Developments in Undulant Fever."——The Sandusky County Medical Society was addressed, May 28, in Fremont, by Dr. Cecil A. Kingman, Bellevue, on arsphenamine.——The Belmont County Medical Society was addressed, June 4, in St. Clairsville by Dr. Elmer G. Horton, Columbus, on poliomyelitis.

PENNSYLVANIA

Philadelphia

Society News.—The Philadelphia County Medical Society has received through the will of the late Dr. Lawrence Webster Fox his medical library, medical instruments, pictures and portraits of distinguished physicians and surgeons and $2,000 for the purchase of medical books and journals.

Research on Function of the Kidney.—A grant of $100,400 for a three year period has been set aside by the Commonwealth Fund for a study of the function of the kidney, to be directed by Alfred N. Richards, Sc.D., professor of pharmacology, University of Pennsylvania School of Medicine. Dr. Richards has devised methods by which the kidney of the frog can be examined microscopically while it is still functioning in the living body. The program of research includes the continuance and extension of these studies and the establishment of a clinical unit where experimental findings can be correlated with observation of patients suffering from kidney disorder.

Personal.—Dr. Herbert L. Northrop, surgeon-in-chief of Hahnemann Hospital and head of the department of surgery in Hahnemann Medical College, received the honorary degree of master of arts at the eighty-third annual commencement of that college, June 11. His two sons, David D. Northrop and Richard F. Northrop, received the degrees of doctor of medicine on the same occasion.——Dr. Bernard J. Alpers, for the last three years associate psychiatrist in the Community Health Center, has been appointed chief psychiatrist, succeeding Dr. Max Levin.——Dr. Robert Tait McKenzie, professor of physical therapy and physical education in the University of Pennsylvania School of Medicine, has been appointed research professor of physical education.——Dr. Percy G. Hamlin has been appointed flight surgeon of the One Hundred and Fourth Medical Detachment, to serve with the Twenty-Ninth Division, Aviation.

SOUTH CAROLINA

Personal.—Dr. Roy D. Sumner was elected medical officer of Rock Hill, May 11, succeeding the late Dr. Joseph R. Miller.

Faculty Changes.—The Medical College of South Carolina, Charleston, has announced faculty changes for the coming year. New assistant professors are Dr. Hillyer Rudisill, Jr., roentgenology and physical therapy; John Hampton Hoch, botany and pharmacognosy, and Dr. Robert Lane McCrady, obstetrics and gynecology. Assistants are Dr. Francis Raymond Price, surgery; Dr. Benjamin Kater McInnes, urology, and George G. Durst, chemistry. Instructors appointed are Drs. Eleanor W. Townsend, clinical pathology, succeeding Clarendon B. Woods, resigned, and Dr. Archibald E. Baker, Jr., surgery.

TEXAS

Health Survey in East Texas.—A health unit for every county in East Texas is the aim of the East Texas Association of Commerce, which is sponsoring a health survey of twenty-five counties. Only six of these counties now have health units. Dr. Claude D. Head, Jr., U. S. Public Health Service, has set up headquarters in Longview for a fight against malaria, a campaign for which the last legislature appropriated $50,000.

VIRGINIA

Society News.—The Virginia Academy of Science at its recent meeting announced the organization of a new section on medical sciences. Physicians in Virginia who are interested in anatomy, bacteriology, biochemistry, embryology, pathology, pharmacology and physiology will be eligible to membership. Dr. John Shelton Horsley, Richmond, is chairman and James E. Kindred, Ph.D., secretary.——Dr. Henry B. Mulholland, University, read a paper on diabetes before the Lynchburg and Campbell County Medical Society, June 5.——The Warwick County Medical Society was addressed, May 25, by Dr. William L. Harris, Norfolk, on "Orthostatic Albuminuria."——Drs. Waddie P. Jackson, Roanoke, and Bathurst B. Bagby, Richmond, spoke on the importance of periodic health examinations, with especial reference to school children, before the Rockbridge County Medical Society, June 11.——Drs. George F. Simpson, Purcellville, Alex F. Robertson, Jr., Staunton, and William O. Bailey, Leesburg, among others, spoke on state and federal medicine before the semi-annual meeting of the Medical Association of the Valley of Virginia, Clifton Forge, May 28.——The Fourth Councilor District held a clinical meeting, in conjunction with the Post-Graduate Medical Society of Southern Virginia and the department of clinical education of the Medical Society of Virginia, May 19, in Petersburg. Dr. Edwin P. Lehman, University, spoke on "Diagnosis of Carcinoma of the Large Bowel," and Dr. Vincent W. Archer, University, on "Roentgen Diagnosis of Neoplastic Disease."——Dr. Byrl R. Kirklin, Rochester, Minn., was guest speaker on "Gastric and Duodenal Ulcers" before the Norfolk County Medical Society, June 1.

WASHINGTON

Hospital News.—Northwestern Hospital, Seattle, which has been for many years the only institution in the city open to irregular practitioners, has changed its management. Under the name of Martha Washington Hospital it will be available to all ethical physicians. The hospital has 100 beds.——The Bremerton City General Hospital has changed its name to Olympic Hospital, Inc. The change was made to correct the misunderstanding that it is city owned and operated.

Society News.—Among the speakers before the Tri-County Medical Society (Whatcom-Snohomish-Skagit), June 12, at Skagit were Drs. Spencer S. Howe, Bellingham, on "Intra-Ocular Foreign Bodies"; Millard T. MacAvelia, Burlington, "Extravasation of Urine," and Harold J. Greer, East Stanwood, "Nephritis."——Dr. Jay A. Myers, Minneapolis, spoke on tuberculosis problems before the Washington Tuberculosis Association, Wenatchee, June 11-13.——June 8, Dr. Mark W. McKinney read a paper before the King County Medical Society, Seattle, on "Medical and Surgical Prevention of the High Death Rate in Acute Appendicitis," and Dr. George E. Price on "Borderline Mental Cases."

State Medical Meeting at Aberdeen.—The annual session of the Washington State Medical Association will be held at Aberdeen, August 3-5, under the presidency of Dr. Arvid E. Anderson, Aberdeen. Guest speakers will be Drs. Meredith F. Campbell, New York, on "Chronic Pyuria in Children"; Frederic J. Cotton, Boston, "Injuries of the Upper Extremity," and Edward John G. Beardsley, Philadelphia, "Cardiovascular Problems of Everyday Medicine." The annual golf tournament will be held at the Grays Harbor Country Club on the first day of the meeting, and the succeeding days will be devoted to the scientific session. Women guests will also participate in a golf tournament at the Highland Golf Club. Members of the association will be entertained by the Grays Harbor County Medical Society at an informal dinner at Pacific Beach, Tuesday evening, August 4.

WEST VIRGINIA

Another Mobile Health Unit.—Dr. Robert H. MacLeod, formerly of Beattyville, Ky., has been named head of a mobile health unit to visit counties in which health work has not been established. A nurse will assist him. In summer the unit will assist with child health conferences and immunization clinics. Pendleton and Calhoun counties have established public health nursing services, bringing the number of counties having such service to eleven.

GENERAL

Prize for Manuscript on Sex Hygiene.—A contest for a pamphlet on sex hygiene has been announced by the Massachusetts Society for Social Hygiene, with an award of $500 for the author of the selected manuscript. The publication is designed for boys and girls between the ages of 14 and 18. The society believes that the subject should be handled in a straightforward manner, which has not characterized such pamphlets in the past. The contest closes Oct. 1, 1931, and the award will be made Jan. 1, 1932. For further information, write to the society, 1150 Little Building, Boston.

Society News.—The tenth annual session of the American Congress of Physical Therapy will be held, October 5-8, in Omaha. The University of Nebraska College of Medicine and the Creighton University School of Medicine will cooperate with the association in furnishing clinical and surgical material. Clinics and clinical demonstrations will be given in the mornings, and scientific papers read in the afternoons. There will be a joint session with the Omaha-Douglas County Medical Society, October 6.——The Association of American Medical Colleges will meet, November 30-December 2, in New Orleans.——It has been tentatively decided to hold the Second International Goiter Conference in Holland in 1932.

A Tribute to Sir Ronald Ross.—Plans are now under way to ask Americans to contribute to a million shilling fund recently started in England as a tribute to Sir Ronald Ross, discoverer of the rôle of the mosquito in the transmission of malaria. Sir Ronald is now partly incapacitated by paralysis. In view of the far-reaching humanitarian and economic effects of his discovery, for which he did not receive financial reward, the committee believes that he should at least be able to spend his remaining years in comfort and freedom from worry.

Dr. Robert L. Pitfield, Philadelphia, is secretary of the Ross Award Fund of America and will receive checks at his address, 5211 Wayne Avenue, Germantown, Pa. In addition to Dr. Pitfield, American trustees of the fund are Drs. Thomas McCrae, Joseph McFarland, Francis R. Packard, Damaso de Rivas, all of Philadelphia; Victor Robinson, New York; Theobald Smith, Princeton, N. J., and Frederick L. Hoffman, LL.D., Newark, N. J.

Methyl Alcohol Will Be Colored Purple.—Methyl alcohol, also known variously as methanol, wood alcohol and wood naphtha, must be colored by the addition of methyl violet and containers must be prominently marked "poison," according to an agreement between manufacturers and the U. S. Public Health Service, effective July 1. The action was taken after the annual conference of State and Territorial Health Officers with the public health service, April 29, when a resolution was adopted requesting the surgeon general to make such an agreement. In addition to the color, which was adopted after conferences with the manufacturers, and the poison label, a chemical deterrent is also required in the form of chloroacetophenone, or tear gas. The effect of this gas would be apparent only under severe exposure, it was pointed out. Antimony-potassium tartrate and triethanolamine are also to be added as buffers in stabilizing the mixture. It was also agreed that the industry would not extend the use of methanol until the conditions under which it may be used have been scientifically established.

Bequests and Donations.—The following bequests and donations have recently been announced:

Michael Reese Hospital, Chicago, $650,000, and University of Chicago, $1,300,000, for medical research, by the will of Albert B. Kuppenheimer.

Maloney Clinic of the University of Pennsylvania Hospital, $25,000 for research on the cause and cure of diabetes, by the will of George S. Coxe.

New Haven, Grace and St. Raphael hospitals, New Haven, Conn., $50,000 each by the will of Egbert Chaplin Fuller.

Presbyterian Hospital, $319,135; Roosevelt Hospital, $212,756; New York Society for the Relief of the Ruptured and Crippled, Fifth Avenue Hospital and Manhattan Eye, Ear and Throat Hospital, all of New York, each $75,984, by the will of the late Otto M. Eidlitz.

Muhlenberg Hospital, Plainfield, N. J., $3,339, by the will of the late Dr. R. R. Sinclair.

New York Ophthalmic Hospital, $25,000, and New York Homeopathic Medical College and Flower Hospital, $50,000, by the will of Dr. John E. Davis. In addition, the residuary estate will eventually be divided between the two institutions.

Hospital for Women and Children, Newark, N. J., $50,000 by the will of Mrs. Nellie K. Rose.

St. Luke's and Children's Homeopathic hospitals, Philadelphia, $40,000 each, and the Babies' Hospital, Philadelphia, $10,000 by the will of Edward Francis Henson.

Memorial Hospital, Philadelphia, $2,000, and St. Luke's and Children's Homeopathic hospitals, Middletown, Pa., $1,000 each by the will of Rudolph Gallati.

The National Stomach Hospital, Philadelphia, $1,500 by the will of J. Frederick Eberle.

The Lenox Hill Hospital and the New York Institute for the Education of the Blind, each $67,805 by the will of the late Georgiana M. Amidon.

Long Island College Hospital, $250,000 by the will of the late Dr. John Osborn Polak.

Georgetown University Medical School, $10,000 for a student loan fund, and Children's Hospital, Washington, D. C., $5,000 by the will of the late Dr. George M. Kober.

Stuyvesant Square Hospital, $6,000; Sanatorium Gabriels, Gabriels, N. Y., $5,000, and St. Vincent's Hospital, New York, $1,000 by the will of the late Mrs. Mary E. Halloran.

St. Luke's Hospital, Davenport, Iowa, $8,000 for upkeep or improvements by the will of the late Sarah Graham Foote Sheldon.

Methodist Episcopal Hospital, Philadelphia, $300,000 by the will of the late Rachel McNeely Zimmerman.

St. Luke's and Children's Homeopathic hospitals, Philadelphia, $5,000 each by the will of the late Lillian H. Curran.

Woman's Hospital of Philadelphia, $1,000 by the will of the late Mabel E. Harris.

PHILIPPINE ISLANDS

Health of the Islands in 1930.—The death rate in the Philippine Islands in 1930 was 23.08 per thousand, as compared with 21.7 in 1929, according to the annual report of Dwight F. Davis, governor general. The increase was partly due to an epidemic of cholera, which broke out after the islands had been free from the disease for three years. There were 5,094 cases during the year, with 3,074 deaths. A special tuberculosis commission created by the legislature in November, 1930 (THE JOURNAL, January 10), is investigating various aspects of tuberculosis, which caused 33,000 deaths last year. Beriberi caused 2,000 fewer deaths than the year before and typhoid deaths also decreased. Five hundred and twenty lepers were released on parole and 6,489 are under observation. A modern leprosy treatment station was opened in Cebu during the year, a gift from Mr. Eversly Childs through the Leonard Wood Memorial, and a similar station is in process of construction at Zamboanga. The medical school is building a new wing to house the school of hygiene. Four new provincial hospitals were opened during the year.

Government Services

Change of Station in the Navy

Lieut. Carl D. Middlestadt, from the Naval Hospital, New York, to the U. S. S. *Lexington;* Lieut. Thomas L. Allman, from the Naval Hospital, New York, to the Asiatic Station; Lieut. Charles M. Parker, from the Naval Training Station, Hampton Roads, Va., to the Asiatic Station; Lieut. LeRoy F. Farrell, from the Naval Hospital, Boston, to the Asiatic Station; Lieut. Orville W. Cole, from the Naval Hospital, San Diego, Calif., to the Naval Station, Guam; Comdr. George F. Cottle, from the Naval Hospital to the Public Health Service of Haiti; Lieut. Charles B. Fulghum, resigned, effective, July 23; Lieut. Comdr. James E. Potter, from the Receiving Ship, San Francisco, to the Submarine Base, Coco Solo, Canal Zone; Lieut. Harry D. Templeton, from the Navy Mine Depot, Yorktown, Va., to the U. S. S. *Constitution*; Lieut. Lester E. McDonald, from the U. S. S. *Tennessee* to the Naval Medical School, Washington, D. C.; Lieut. George W. Wright, from the Naval Hospital, Mare Island, Calif., to the U. S. S. *Tennessee*; Lieut. Walter H. Schwartz, from the Naval Hospital, San Diego, Calif., to the U. S. S. *Maryland;* Lieut. Comdrs. Warren E. Bradbury, from the Naval Hospital, Great Lakes, Ill., and William H. Funk from the Naval Hospital, Portsmouth, N. H., to the Asiatic Station; and Lieut. John M. C. Covington to resign, effective August 15.

U. S. Public Health Service

A. A. Surg. John C. Branham, relieved at Marine Hospital, San Francisco, and assigned to duty at Miami, Fla.; Asst. Surg. Edward C. Rinck, relieved from duty at Atlanta, Ga., and assigned to duty at U. S. Penitentiary Annex, Fort Leavenworth, Kan.; Asst. Surg. Joseph G. Pasternak, relieved at New Orleans, and assigned to duty at National Institute of Health, Washington, D. C.; Asst. Surg. Robert K. Maddock, relieved at San Francisco, and assigned at Relief Station, San Pedro, Calif.; Asst. Surg. Erwin W. Blatter, relieved at Fort Leavenworth, Kan., and assigned to duty at U. S. Penitentiary, Atlanta, Ga.; Asst. Surg. Joseph O. Dean, relieved at Philadelphia and assigned to duty at Washington, D. C.; A. A. Surg. Cornelius P. Munday, relieved at Carville, La., and assigned to duty at Relief Station, Port Arthur, Texas; A. A. Surg. Harry H. East, relieved at Port Arthur, Texas, and assigned to Marine Hospital, Carville, La.; Sr. Surg. Lawrence Kolb, relieved at Dublin, Irish Free State, and assigned at Washington, D. C.; Surg. George A. Wheeler, relieved at Milledgeville, Ga., and assigned at National Institute of Health, Washington, D. C.; Asst. Surg. Charles W. Folsom, relieved at New Orleans Quarantine Station and assigned at Marine Hospital, New Orleans.

Army Personals

Major Oramel H. Stanley, relieved at the University of Vermont, Burlington, and will sail about September 23 for the Hawaiian Department; Major Gouverneur H. Boyer, relieved at Fort Bragg, N. C., and will sail about September 23 for the Hawaiian Department; Capt. Pinkney L. Ogle, relieved at Governors Island, N. Y., and will sail for the Hawaiian Department about October 2; Major Albert Bowen, relieved at Fitzsimons General Hospital, Denver, and will sail about October 24 for the Hawaiian Department; Col. Henry F. Pipes, relieved at Fort Humphreys, Va., and assigned in command of William Beaumont General Hospital, El Paso, Texas; Major Henry W. Grady, relieved from duty with the Governor of the Panama Canal, Canal Zone, and assigned at Fitzsimons General Hospital, Denver; Major Luther R. Moore, relieved at Walter Reed General Hospital, Washington, D. C., and assigned to the Panama Canal Department; Major Hertel P. Makel, relieved from duty with the governor of the Panama Canal and assigned at Fort Totten, N. Y.; Major Dean F. Winn, relieved at Fort Totten and will sail about December 11, for the Panama Canal Department; Major Howard J. Hutter, relieved in the Hawaiian Department and assigned at the Army Medical Center, Washington, D. C. The following officers are assigned to duty at the stations indicated, following the completion of their present tour of foreign duty: Major Frank L. Cole, Letterman General Hospital, San Francisco; Capt. Richard H. McElwain, Carlisle Barracks, Pa.; Major William O. H. Prosser, Army Medical Center, Washington, D. C.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 27, 1931.

The Order of the Hospital of St. John of Jerusalem

The revival in Great Britain 100 years ago of the Order of the Hospital of St. John of Jerusalem has been celebrated with great pomp at Westminster Abbey. The order was founded 800 years ago for the relief of Christian pilgrims to the Holy Land. Later its knights exercised sovereignty over Rhodes and Malta and engaged in the suppression of piracy. The order was the first of the great orders of medieval chivalry established in England and had its headquarters at the great central priory in London. During the troubles of the sixteenth century it was deprived of its wealth and dissolved. In the early part of the last century it was revived in England, though, on religious grounds, the grand master in Rome refused to recognize the validity of this. However, it has been continued on an independent national basis and Queen Victoria became its sovereign head and patron. The order established in 1878 a body known as the St. John's Ambulance Brigade, whose members voluntarily give their services to those who suffer accidents in the streets of the metropolis. For this purpose the order provides the requisite training. In conjunction with the British Red Cross Society (a body formed much later—in the last century) it gave devoted service in the Great War. The brigade has issued nearly 3½ million first aid and home nursing certificates and is now able to put 70,000 well trained men and women into the fighting line against accident and disease.

A New Theory of Abdominal Pain

Mr. John Morley, assistant surgeon at the Manchester Royal Infirmary, who is well known for his writings on abdominal surgery, has elaborated in a small book on abdominal pain a theory which he has been advocating for some years. This theory, while largely based on the veiws of Lennander and Hurst, is revolutionary in that it contradicts the current view, originated by Mackenzie, that all visceral pain in referred to the abdominal wall by a viscerosensory reflex. In 1911 Hurst dealt this theory a severe blow when he showed that, while insensitive to ordinary stimuli, the stomach and intestine are sensitive to tension of the muscular wall. But Mackenzie's theory that the somatic phenomena of deep and superficial tenderness and muscular rigidity, associated with inflammation of the abdominal viscera, are referred to the abdominal wall, by the mechanism of a viscerosensory or visceromotor reflex, is still accepted. A study of abdominal pain for twenty-five years has convinced Morley that this theory is untenable. He agrees with Hurst that true visceral pain exists and is due to abnormal tension on the splanchnic nerve endings in the muscular walls of the hollow viscera. It is in no sense referred to the superficial structures of the abdominal wall but is deep-seated, central and not accurately localized. But deep and superficial tenderness and muscular rigidity of the abdominal wall, so commonly observed in association with inflammation within the abdomen, are in no way concerned with the afferent autonomic system but are entirely referred from the highly sensitive cerebrospinal nerves of the parietal peritoneum. Mackenzie did recognize a peritoneomuscular reflex, but he believed that protective rigidity was more commonly due to a visceromotor reflex. The initial pain of acute appendicitis is not felt on the surface of the body, as Mackenzie's viscerosensory reflex theory assumes, but is deeply situated and vaguely localized in the center of the abdomen. At this early stage, tenderness and rigidity are usually completely absent—a source of error in diagnosis. Lennander attributed this pain to lymphangitis and lymphadenitis at the root of the mesentery, but it occurs too early for this. Morley believes that the pain is a true visceral one and has a definite protective function. It is due to vigorous peristalsis of the appendix produced by obstruction of its lumen. When gangrene or local perforation relieves the tension the pain disappears. A few hours from the onset of an acute attack, the second pain appears. The initial pain is usually still present but tends to disappear as the second develops. The latter is of a different kind. It is limited to the right iliac fossa and is of a sharp, stabbing nature, accentuated on movement, and the iliac fossa becomes exquisitely tender. Mackenzie found superficial soreness or hyperalegesia in some cases of appendicitis and has been followed by Sherren, who taught that hyperalgesia is never present when the appendix is gangrenous or perforated, and this has been accepted by later writers. Morley has found definite hyperalgesia in such cases and so have Robinson and Cope. As the incidence of hyperalgesia varies from 21 to 59 per cent according to different observers, it is not of much practical value in diagnosis. Morley points out that developmentally the appendix is a median organ and therefore its splanchnic fibers must come from both sides and the hyperalgesia would be bilateral if Mackenzie's theory were correct. Its unilateral distribution shows that it is produced by stimulation of the sensitive parietal peritoneum. The same argument holds for the muscular rigidity and deep tenderness, which in the early stages correspond exactly with the position of the appendix. Morley contends that the muscular rigidity and the localized pain and tenderness are entirely due to irritation of the parietal peritoneum and that this view renders the diagnosis much simpler and more accurate.

The Testing of New Drugs

The flood of new drugs from Germany is foisted on the profession and the public by extensive advertising, which is loud in praise of their value in the treatment of disease but silent as to injurious effects, even when these may be fatal. The most glaring example is the quinoline derivatives, of which cinchophen, extensively advertised under trade names, has been most extensively used. It was lauded as a remedy for gout and rheumatism and was prescribed on a considerable scale by leading physicians in this country before it was discovered that, even when the dosage recommended by the manufacturers is followed, toxic jaundice, which sometimes is fatal, was produced in a number of cases. In his recent Lumleian lectures on toxic jaundice, Sir William Willcox, our leading toxicologist, stated that the great variety of drugs in common use which may act as liver poisons and produce dangerous jaundice shows how necessary it is that these drugs should be submitted to careful toxicologic and therapeutic tests on man as well as on animals before they are placed on the market. The medical profession should be informed not only of the therapeutic properties of new drugs but also of the danger that may arise from idiosyncrasy or overdosage. In most instances it is not sufficiently informed of the dangers of new drugs, which are introduced into this country in increasing amount. The trouble does not end with the prescribing of these drugs by physicians, but the public, hearing about their uses, purchases them without the prescription of a physician. Under the poisons act, dangerous drugs are scheduled and their sale is restricted by safeguards, such as requiring the prescription of a physician in certain cases. But Sir William Willcox points out that the present system of scheduling is quite inadequate to keep pace with the rapid developments of the chemical manufacturing industries, which are daily launching new and imperfectly tried complex organic drugs on the market. The cinchophen group of drugs is not even on the poisons schedule and can be sold by any unqualified person. Willcox recently saw a patient comatose from phenobarbital poisoning who had purchased a bottle of 100 tablets of 1½ grains on the production of an old prescription. He had taken over 90. Our system of the control and sale of poisons and toxic drugs needs to be completely altered and modernized.

Diet Deficiency Among Natives of Africa

It is a prevalent error that savages are men of splendid physique and are free from disease, which is considered a product of civilization. An important research published by the medical research council shows that savages are not free from deficiency diseases. The diet of two African tribes—the Masai and the Akikuyu—living side by side in Kenya but feeding differently was investigated by Dr. J. B. Orr, director of the Rowatt Institute, Aberdeen, which is devoted to nutritional research, and J. L. Giles. The diet of the Masai consists to a large extent of milk, meat and raw blood; that of the Akikuyu mainly of cereals, roots and fruits, the bulk being cereals. The Masai have a relatively high intake of protein, fat and calcium, while the Akikuyu have a high intake of carbohydrate and a low one of calcium. The full-grown Masai is on an average 5 inches taller and 23 pounds heavier than the full-grown Akikuyu and his muscular strength, as determined by the dynamometer, is 50 per cent greater. Marked differences were found in the incidence of disease in the two tribes. Bony deformities, dental caries, anemia, pulmonary disease and tropical ulcer were much more prevalent among the Akikuyu. On the other hand, intestinal stasis and rheumatoid arthritis were more common among the Masai. The conclusion is that the diet of Akikuyu is badly balanced, being too rich in carbohydrate and deficient in calcium and probably in vitamins. On the other hand, the Masai go to the opposite extreme and take too little vegetable food rich in cellulose. The investigation was undertaken not merely in the interest of science but with a view to improve the health of the natives. It is suggested that improvement might be brought about by increasing the use of green vegetables by both tribes and of milk by the Akikuyu. This could be brought about by an improvement in agriculture and animal husbandry. The problem is not confined to Kenya but exists in many areas in our tropical dependencies, where the loss of health attributable to deficient diet is of considerable economic importance. The research goes to show that diet deficiency is by no means due only to civilization, though this is responsible for much in the more advanced countries. The research confirms a remarkable statement by Sir Gowland Hopkins, the discoverer of vitamins, that no race has ever been free from diet deficiency.

Gift of Mace from the Royal College of Surgeons of England to the Royal College of Surgeons of Australia

The Council of the Royal College of Surgeons of England is presenting a mace of hand-wrought and chiseled silver to the recently founded Royal College of Surgeons of Australia. The Royal arms of George V form the cap to the head and are encircled by a crown surmounded by the orb and cross. The coronet, or resting of the crown, is made up of the Rose of England, the Star and Wattle of Australia and the Fern emblem of New Zealand. The staff is decorated with a pattern of English roses, Australian wattle and New Zealand ferns. The whole forms a beautiful object 3 feet 10 inches long, weighing 189 ounces troy. The dedicatory inscription is, "The gift of the President and Council of the Royal College of Surgeons of England, as from brothers to brothers."

Protection of the Child from Tuberculosis

At the annual conference of the National Association for the Prevention of Tuberculosis, Sir Robert Philip, professor of tuberculosis in Edinburgh University, gave an introductory address as vice chairman of the council. He said that the infant was practically never born tuberculous nor need it, if infected later, become the prey of tuberculosis. The baby even of a tuberculous mother was not born tuberculous. Whatever precautions were taken, the child would sooner or later run its chance amid the human herd, where tuberculosis abounded. By the fourteenth year the majority of children—it might be said 75 per cent—had been infected. The age period of greatest infection was not earliest infancy but from 3 or 4 up to 7 years. The infection might secure some degree of lasting immunity, provided the natural resistance was maintained at a high level. "Nature is on the side of the child. She flies to arms against infection. It is we, fond parents and physicians, who fail to take Nature's guidance and assist her methods." The latest claim was that advanced by Calmette for routine inoculation of infants with B C G vaccine. As one who had followed the proposal sympathetically and sifted the evidence with care, Sir Robert Philip felt constrained to say that there remained grounds for hesitancy in recommending the general adoption of the method. But whatever might be said of tuberculin in other spheres, there was no doubt as to its value in determining at the earliest possible moment the occurrence of tuberculous infection in the child. Happily, the measures that conduced toward a heightened resistance to tuberculosis were essentially the same as those which tended toward the maintenance of perfect health and the exclusion of all infections.

PARIS

(From Our Regular Correspondent)

June 3, 1931.

The Need for Poliomyelitis Serum

Professor Netter, addressing the Academy of Medicine, launched recently a campaign looking toward the more active organization of the defense against poliomyelitis, the ravages of which are increasing, as shown by the epidemic last year in Alsace. He suggested the adoption of measures taken in certain parts of America, citing more particularly the province of Manitoba, where, in 1928, 9 liters of serum was collected in Winnipeg from 113 former patients; and the province of Ontario, where, in 1929, 387 out of 558 poliomyelitis patients received serum. Experiments justify the statement that the serum exists in eight or nine tenths of former patients and that in some patients the potency is extremely high. A thirtieth of a cubic centimeter may contain a dose of antivirus sufficient to neutralize a quantity of virus capable of producing poliomyelitis in 3,000 monkeys. By mixing the serum of several former patients whose poliomyelitis goes back to different periods, a serum with a certain average potency may be secured, although experimental control will still be needed. The possibility of the transmission of syphilis need not be feared when the serum employed has been heated to a temperature of 56 C. during the sterilization process, and when, as an additional precaution, the blood of the donors has been subjected to the Wassermann test. The collection of serum will be easy if, as research has shown, the potency of serum is as marked in persons who have lived without becoming ill in a milieu in which poliomyelitis has existed in epidemic form.

The Activities of the American Hospital at Neuilly in 1930

The American Hospital at Neuilly, near Paris, has published a report on its activities during 1930. During the year, it has given treatment to 2,325 patients from different countries. It has hospitalized 1,227 persons coming from forty-three different states of America, the District of Columbia, and the Philippines, and from thirty-four foreign countries (excluding France). The American colony in France sent 1,125 patients to the American Hospital. Among the patients from Paris there were 359 from New York State, 94 from California, 72 from Pennsylvania, 67 from Massachusetts, 62 from Illinois, 34 from the District of Columbia, and 326 from other states. Of the patients coming from foreign countries there were 59 from England, 25 from Canada, 25 from Norway, 12 from Sweden, 11 from the Philippines, 10 from Italy, and 69 from other foreign countries. The nurses of the American Hospital are frequently called by telegram or by telephone to take a case outside of the hospital, not only in the hotels of Paris but also occasionally at some more distant point. One was called to Pau, another to Bar-

celona and another to Munich. In each instance, the nurse left by the first train. Other nurses accompanied on journeys sick or infirm compatriots who were compelled to travel. The medical staff of the hospital is composed partly of American physicians authorized to practice in France and partly French physicians.

The Study of Movements by Means of Projected Films

Mr. d'Arsonval, member of the Institute, has presented to the Academy of Sciences a communication of Mr. Huguenard, assistant director of the Ecole des hautes études, and Mr. Magnan, professor in the Collège de France, on an ultrarapid cinematograph that produces from 2,000 to 3,000 views per second. By means of the new apparatus, they have been able to secure without difficulty 2,000 and more views per second, and then, on projection, to slow down the registered movement. The method they employ consists in dividing the normal sensitive film into a number of parallel bands each receiving an impression through a normal objective, the various objectives working at equal intervals. Huguenard and Magnan placed side by side four objectives of small size each covering a fourth of the width of the film. Before these objectives turns a shutter provided with a series of slits. As the film moves as an endless chain at a speed of about 3 meters per second, it is possible to record about 2,400 views during that length. The authors have shown furthermore that if they could have at their disposal an apparatus utilizing a film 60 millimeters wide, the number of views might be increased to 10,000 per second.

The General Effects of B C G Vaccine

Mr. Calmette has presented to the Academy of Medicine a communication that he received from two Russian physicians, Mr. Takhmis and Mlle. S. Chagalova, which sets forth, as Calmette himself has constantly maintained, that inoculation with the B C G vaccine, in addition to its prophylactic action against tuberculosis, has most excellent effects on the general health of the child, his resistance to disease and his growth and development. These authors experimented with twins—sixteen different pairs—which they observed for from fifteen to forty-two months. In each instance, they vaccinated the twin that appeared the weaker. The diet and the hygienic conditions remaining the same, they observed that the vaccinated child regained the distance that separated him from his twin sibling or even surpassed the latter in growth and in weight, while he showed also better resistance toward the diseases of childhood.

Dental Practice in Madagascar

A decree of April 4 authorizes native practitioners in Madagascar to practice the dental art. This new regulation is due to the absence of qualified dental physicians or surgeons in most of the centers of the island, in spite of the importance of its economic progress and the rapid increase in European population. A department of stomatology is to be established at the school of medicine in Tananarive. The students will pursue the courses and must successfully pass the final examinations before they receive a certificate entitling them to practice temporarily as native dentists. The permanent certificate will not be given them until they have served four years in the Assistance médicale. The native dentists who are granted a temporary license will be subject to the same supervision as the native physicians graduated by the school of medicine at Tananarive.

The Hygiene of Human Habitations

The *Journal officiel* announces the creation of a Comité national d'hygiène de l'habitation, of which Senator Justin Godart, formerly minister of health, has been elected chairman. The purpose of the committee is to make research and to institute measures that will make human habitations more healthful and more comfortable; to coordinate all efforts in that direction, and to disseminate the ideas and the results developed. All types of habitations will be surveyed, from the isolated home to the apartment dwelling, including theaters, motion picture houses, schools, garrisons, factories and commercial houses. All problems will be considered: the site, the architectural plans, the construction, the management, the upkeep, the furnishings, the insolation, the ventilation; the protection against cold, heat and noise. The introductory fact-finding survey of the committee has brought out that many city dwellers spend, on an average, twenty hours a day in various types of habitation, including the home and the office. It is important, therefore, that the hygienic conditions of offices be specially surveyed, particularly today, when the urban population continues to grow as the result of the influx from the rural districts.

BERLIN

(From Our Regular Correspondent)

June 8, 1931.

The Roentgenologic Congress

The Roentgenologic Congress, which was held in Baden-Baden, April 17-19, under the chairmanship of Holfelder (Frankfort), was well attended by both German and foreign physicians. The discussions centered about the official papers on the main topics: the spine, aortography, roentgen injuries, cancer treatment, protective measures.

SPINAL CHANGES OF LOCAL CONSTITUTIONAL ORIGIN

The official paper on the first topic, "Spinal Changes of Local Constitutional Origin," was presented by Meyer-Burgdorf of Rostock. The variations in the structure of the spinal column are exceedingly numerous; the transition to pathologic, or disease-producing, disorders is extremely gradual, as may be seen in cervical ribs and in split vertebrae. The speaker showed numerous examples. He discussed spondylolisthesis, in which it is often difficult to decide in a given case whether the condition is to be ascribed to a congenital anomaly (spondylolysis) or to traumatic action. Importance attaches to roentgenograms of the articulations of vertebral arches obtained by lateral and by diagonal exposure and also to stereoscopic roentgenograms.

VERTEBRAL CHANGES DUE TO INFECTION AND TUMOR

The official paper on the second topic, "Vertebral Changes Due to Infection and Tumor, and Their Adjacent Areas," was presented by Baensch of Leipzig. The diagnosis of recent inflammatory foci and of small tumors is difficult because, even though the outlines of roentgenograms are clear, deeper lying foci do not become visible until they have attained considerable size. On the other hand, the later formation of hyperostoses points to the end of the inflammation; further, large abscesses, marked changes in the intervertebral disks, and degeneration of the vertebrae, due to inflammation or tumor, become distinctly recognizable. The differential diagnosis as to the kind of inflammation or tumor is difficult and sometimes impossible. This is true especially of the rare disorders, such as spondylitis typhosa, actinomycosis and echinococcus, whereas the frequent tuberculosis can be recognized comparatively easily.

AORTOGRAPHY

The official paper on the third topic, "Aortography," was presented by dos Santos of Lisbon. He has made more than 200 aortograms by puncturing the aorta abdominalis; no untoward after-effects have resulted. Even in aortas that have undergone changes due to aneurysms or atheromas there is no danger. The puncture is performed as in splanchnic anesthesia. As a contrast agent, 20 cc. of a combination of two thirds of sodium salt of mono-iodo-methanesulphuric acid and one third of sodium iodide was employed to advantage. Lumbar and conduction anesthesia should precede. The contrasts in the roentgenograms were extremely distinct. The abdominal vessels (mesentery, liver, spleen, kidneys) were clearly outlined and the diagnostic value for certain obscure abdominal disorders was plainly evident.

LOCAL EFFECTS OF ROENTGEN IRRADIATION

The official paper on the fourth topic, "Local By-Effects and After-Effects of Roentgen Irradiation," was presented by Holfelder of Frankfort-on-Main. Whereas in surface therapy the irradiation can be restricted more or less to the focus of the disease, in deep therapy the overlying healthy tissues have to be irradiated and more or less damaged. The art of establishing the dosage can be learned only through many years of practice and experience. It cannot be foreseen for certain whether or not, as a result of the application of protracted, fractioned doses, remote injuries will arise in later years. The main consideration, however, is that the good effects of the irradiation shall far exceed any injurious secondary effects. In the diagnosis roentgen "burns," or, more properly, inflammatory caustic by-effects, may be absolutely avoided. Many forms of damage are so-called combination or cumulative injuries. Heavy doses applied to the skin require special protection and special control. Ignorance of the dangers of roentgen rays in the hands of inexperienced persons is still a menace. More attention should be paid to scientific training of radiologists.

GENERAL EFFECTS OF ROENTGEN RAYS AND INJURIES SUFFERED BY RADIOLOGISTS AND OTHERS

The official paper on the fifth topic, "General By-Effects and After-Effects of Roentgen Rays and Injuries Suffered by Radiologists and Others," was presented by Grashey of Cologne. The speaker considered in part indirect or remote effects and in part direct irradiation of organs and tissues, which, if the technic is defective, are irradiated at the same time, or, even if the technic is good, possibly cannot be spared. Roentgen intoxication is the first and the most conspicuous expression of the general effects of roentgen rays. It is brought about chiefly through the toxic action of absorbed cell degeneration products. The formerly overvalued electric charges, nitrous gases, and the like, play now a subordinate part. Since, with intensive irradiation, the blood likewise is impaired, previous blood examination and later blood control are necessary. Organs and portions of the body that do not require irradiation should be spared as much as possible, since, by heavy doses, they may be greatly damaged. Such are: germinal cells, hematopoietic organs, salivary glands and jaw bones, suprarenals, kidneys, liver, bladder, pleura, intestine, peritoneum. In young persons, organs or body parts receiving unneeded irradiation may become retarded in their growth (mammae, epiphyses). Occupational injuries in factories no longer occur; nor among the assistants, if the regulations established by law are fully complied with. Physicians expose themselves, in connection with radiologic diagnosis, to many dangers, especially in fluoroscopic palpation without adequate glove protection, or in holding dental films.

Martius, gynecologist, of Göttingen, presented a paper on damaging of the germinal cell. In man no injuries in the offspring have been shown to be certainly due to roentgen irradiation. But since, according to the laws of hereditary transmission, the quite possible roentgen mutations may become manifest in later generations, great caution is entirely in order.

Further papers and addresses were concerned with the local organization of cancer control and with numerous diagnostic (more particularly, technical) problems.

A New Center for Tuberculosis of the Skin

Since the end of 1930, the Heilstätte für Hauttuberkulöse in Breslau has been in operation. Medical treatment is given by the adjacent Universitäts-Hautklinik, of which Professor Jadassohn is the director. Owing to this connection, the new institute could begin operations with the limited funds supplied to the Zentralkomitee zur Bekämpfung der Tuberkulose by the federal ministries interested, together with the financial aid furnished by the province and private organizations and individuals. The institute has at present thirty-four beds. The institute, as was the Lupus Pension, which it has replaced, is to be supported by the contributions of the boarders, which, in view of the large number of patients visiting the dermatologic clinic (about 440 during the year), may be quite possible.

BELGIUM

(From Our Regular Correspondent)

June 4, 1931.

Smallpox or Alastrim

In the agricultural bulletin of the Belgian Congo, Dr. Pigneur publishes a series of researches on the virus of alastrim. In the veterinary laboratory of Kisenyi, he performed a number of experiments to determine whether or not smallpox and alastrim constitute two different viruses.

His first experiment was on a heifer, a sheep, a goat and a chicken. By superficial scarifications the virus of alastrim was introduced into the skin without result. Under the same conditions, all the animals reacted positively to the virus of smallpox.

Second experiment: Calmette and Guérin had previously succeeded in provoking vaccinal immunity by the injection of cowpox subcutaneously. Pigneur used the same method for alastrim in a number of animals, which presented no reaction. The animals treated were inoculated, twenty days later, with cowpox, all with success.

Third experiment: One of the natives attached to the vaccination service (who had been vaccinated two years previously) presented a confluent eruption of alastrim. He was given 40 cc. in four doses, at ten hour intervals, of heifer serum used for the production of antismallpox vaccine, a serum collected thirty days after the appearance of pustules. It had no effect on the disease, which continued its normal course. The injection, as a preventive measure, of 10 cc. of the same serum into the wife of the patient did not prevent her from contracting the disease. From these experiments, the author holds that alastrim is not communicable to animals receptive to cowpox, that it does not immunize against cowpox, and that neither the smallpox vaccine nor the serum of an animal that has recovered from cowpox furnishes protection against alastrim. He concludes that alastrim is not an attenuated form of cowpox but an entirely different disease.

Characteristics of the People of Belgium

Dr. Govaerts, who has specialized in eugenics and ethnology, has published a study on the morphologic and pathologic characteristics of the people of Belgium. The records of the military recruiting stations furnish data in connection with researches of this kind. Compulsory military service brings together each year all the young men of the country who have reached recently the military age and imposes on them a thorough medical examination. A royal decree establishes the list of infirmities that justify exemption, postponement of service or admission to the lighter or auxiliary services and divides them into three categories: (1) diseases and infirmities entitling to exemption; (2) diseases and infirmities leading to postponement of service or admission to the auxiliary services, and (3) diseases and infirmities leading to admission to the auxiliary services. The author utilized such records furnished in 1926. The statistical material comprised the records of 66,653 men who had submitted to a clinical examination and whose height, weight and chest girth had been determined. Previously, in collaboration with Dr. Sillevaerts, the author sought to establish the average height, weight and chest girth. He reached the following conclusions: The average height (1.67 meters; amount of variation, 5 cm.) continues to rise throughout the kingdom, a phenomenon already observed by Houzé and Vervaeck. The increase is most marked in the provinces of Limburg, Antwerp, Brabant and East Flanders. On the other hand, in the provinces of Hainaut, Liége and Namur the shorter statures are increasing in fre-

quency. The average weight is 60.5 Kg., with a range of variation of 6 Kg. Comparing the distribution of the weights observed with that deduced theoretically, there is in our country an increase in the number of persons with a weight below the average. The same is true of the chest girth, the average value of which is 84 cm. Thus, in a general way, the height in Belgium is increasing, and the weight and the chest girth are decreasing, so that corpulence of the ordinary type is on the wane. Thus far, the researches have dealt with the geographic distribution of the index of robustness and the various morbid causes influencing the total or partial exemption from military service.

The morbidity, judged by the causes of inaptitude for military service, and the robustness as shown by the elements height, weight and chest girth, are distributed in a parallel manner and are above the influence of race.

The Belgian people is becoming transformed and is tending toward a more uniform type but susceptible of modification under the social influence of each region. Thus, a morphologic type and certain pathologic disorders that are peculiar to it are encountered. Brabant is in the minimal range of health and robustness, whereas Luxemburg and the province of Namur are in the maximal range. The other provinces range more or less differently, depending on the point of view from which they are considered. The population of Belgium is thus characterized, from the morphologic point of view and the standpoint of health, by a regional distribution rather than by ethnical differences.

Anemias Provoked by Roentgen Rays and by Radioactive Bodies

At the fifth Congress of Physical Therapy, Mr. Lambin of Louvain discussed the subject of anemias provoked by roentgen rays and by radioactive bodies. Experimentally, both provoke an anemia through medullary insufficiency. From the clinical point of view, one observes the same blood changes under the influence of roentgen rays and of radioactive bodies; it is a special type of anemia especially grave in patients who present lesions of the hematopoietic organs; in some cases even fatal anemias are observed. In grave cases the preferred treatment is repeated blood transfusions.

A New Review

The first number of *La cure marine*, a review dealing with thalassology, has just appeared. The general secretary is Dr. R. de Haene, 94 Boulevard Van Iseghem, Ostende. The review will have an opportunity of manifesting its activity in a widely different manner, since its field will bring it into touch with several biologic and medical sciences; for example, biology, orthopedics, pediatrics, disorders of nutrition, hydrology. The necessity imposed on the practitioner of keeping up with medical progress in the midst of a life filled with absorbing tasks has induced the editorial department to condense the articles into brief abstracts. The review will contain each month a literary article, for which a number of eminent writers have been secured.

RIO DE JANEIRO

(From Our Regular Correspondent)

June 15, 1931.

Experiments with Virus of Exanthematic Typhus

Dr. J. Lemos Monteiro, in a lecture delivered before the Sociedade de Biologia of São Paulo, stated that the close relation between the micro-organisms of the group of *Rickettsia* and exanthematic typhus is evident. Zinsser and Castañeda believe that the presence of *Rickettsia* in the organs of animals inoculated with virus of typhus fever may be related to the temperature of certain organs, which is lower than in other organs of the body, such as the tunica vaginalis of the testicle, in which the organisms are frequently found. The presence of *Rickettsia* in the testes of inoculated animals may also be due to a diminished phagocytosis, which in the author's experiments was provoked by the subcutaneous injection of benzene previous to the inoculation. Phagocytosis is even more diminished when the animals are previously given an insufficient diet. Nagayo and his collaborators, in making experiments first on tsutsugamushi disease and later on typhus fever by the inoculation of the virus in the anterior chamber of the eye, discovered that in the normal eyeball there are favorable conditions for the isolation of *Rickettsia* in the endothelial cells of Descemet's membrane, after the inoculation by the ocular route. The speaker is carrying on experiments similar to those of Nagayo with the same technic of inoculation by the ocular route, by using virus of exanthematic typhus of São Paulo, in order to determine the properties, forms of transmission and some other characteristics of this variety of typhus fever. The inoculations were made with either of the following materials: citrated or defibrinated blood from infected guinea-pigs, which was withdrawn during the febrile stage; an emulsion prepared from the brains of infected guinea-pigs or rhesus monkeys, which were killed during the attack of fever, or the aqueous humor of rabbits, guinea-pigs or rhesus monkeys previously infected with virus by the ocular route. The results obtained by the speaker with the strains of this variety of typhus fever were identical to those obtained by Nagayo with the virus of common typhus fever. The ocular reaction following the inoculation is more intense in guinea-pigs than in rabbits or in the rhesus monkey. After an incubation of two or five days, guinea-pigs have congestion and inflammation of the conjunctiva, lacrimation and more or less intense opacity of the cornea. The opacity of the cornea after the inoculation is slight in rabbits and in the rhesus monkey and their ocular symptoms are similar to those observed in iritis. Both in guinea-pigs and in the rhesus monkey the febrile reaction and evolution of the disease following the inoculation by the ocular route are identical to those observed in the same animals after intraperitoneal or subcutaneous inoculation with the same virus. Many of the animals die during the experiment. The febrile reaction following the inoculation is slight in rabbits. It appears only during the intensity of the ocular reaction and lasts as a rule from five to ten days.

The speaker has performed about thirty inoculations with virus by the ocular route. He has also made some passages by using in the inoculation the aqueous humor of guinea-pigs which were infected by the ocular route. In order to ascertain whether the febrile reaction following the inoculation was a typical attack of typhus fever, inoculations were made in normal animals with blood from infected ones; also an emulsion prepared from the brains of infected animals was used in the inoculation. Immunity tests were made in animals which recovered from the infection. The local reaction was considered as positive only when followed by the development of characteristic fever. *Rickettsia* was frequently found in the endothelial cells of Descemet's membrane and in macrophage cells of the aqueous humor in smear cultures made with scrapings of the posterior aspect of the cornea or with aqueous humor. The material had been taken between the second and the fifth day of the appearance of the ocular reaction and just when both the ocular and the general reactions were at their period of greatest intensity. With the technic used by the speaker, *Rickettsia* may be seen stained blue while the cellular protoplasm shows a light pink and the nucleus of the cell shows a dark pink. In the variety of typhus studied by the speaker, *Rickettsia* appears as intracellular elements similar to small coccoids or fine rodlike organisms. Sometimes two stained organisms seemed to be united at a point of a paler hue. They group together in a given area of the cell near the nucleus and some of them are scattered in the cell like more or less filamentous organisms. The attempts made to cultivate the microorganisms by the common laboratory methods as well as by planting the aqueous humor have heretofore given negative

results. From his experiments the speaker reaches the following conclusions: The virus of the exanthematic typhus of São Paulo injected into the anterior chamber of the eye of certain animals provokes an ocular reaction followed by a general reaction of the same nature as that provoked by intraperitoneal inoculation of the same virus. Micro-organisms which, because of their characteristics, cannot be differentiated from *Rickettsia* may be found in the lesions of the eyes, especially localized in the endothelial cells of Descemet's membrane, after an inoculation by the ocular route. As inoculation by the ocular route made with the virus of the blood of patients with typhus fever causes the same reactions as the inoculation with material from infected animals, inoculation by the ocular route may be considered as a means of diagnosis of exanthematic typhus. *Rickettsia* will be found in the ocular lesions following the inoculation.

Biology of Transplantable Chicken Sarcoma

Drs. J. R. Meyer and J. Saborido in a lecture recently delivered before the Sociedade de Biologia of São Paulo stated that the etiologic agent of sarcoma is very resistant to immunizing agents. The speakers reported success in conferring a preventive immunization in chickens against the inoculation of a virulent specimen of sarcoma by means of injections prepared with the pulp of the tumor, dried in a vacuum and with a precipitate obtained by treating the liquids from tumors with concentrated ethylic alcohol.

Action of Coffee Infusion on the Metabolism of Purine Bodies

Drs. O. Oliveira and P. Santos, in a paper read before the Sociedade de Biologia of São Paulo, reached the following conclusions: Coffee infusion provokes alterations of the uricacidemia which alterations seem to depend on a mobilization of uric acid under the influence of caffeine, the salts of potassium and some other elements contained in the coffee infusion. The elimination of uric acid from these organs should be in relation to their assimilation of the constituents of the coffee infusion, such as sodium, potassium and other elements. The function of potassium would be to cooperate in the increase of alkali reserve, thus increasing the neutralization of uric acid. Potassium may also have the function of increasing the bimetallic phosphates, which would facilitate the solubility of uric acid. The elimination of uric acid depends on the integrity of the renal function and it is the first product retained when the functions of the kidneys are disturbed.

Treatment of Shock with Injections of Acacia Solution

Dr. O. de Araujo, in a paper read before the Sociedade de Biologia of São Paulo, reached the following conclusions: Histamine produces a condition of shock in which the predominant factor is the fall of the arterial pressure, which depends on dilatation of the capillary vessels. The transudation of the blood plasma is of secondary importance in the production of shock because it is not constant. There seems to be no difference between the action of the common solution of acacia and a solution of acacia with a percentage of calcium reduced to a percentage similar to that of the blood serum and with a hydrogen ion concentration of 7.2.

TURKEY

(From Our Regular Correspondent)

Ankara, June 20, 1931.

Regulations Concerning the Sale and Export of Drugs

As the result of the decisions of the council of ministers, the following regulations have recently been decided on and promulgated:

Narcotics now in stock or produced in the future will be exported according to regulations by which the Istanbul health department will be informed of the amount and kind of the goods to be exported, the name and address of the recipient, and the route by which the goods are being sent. If the country to which the goods are being sent requires that the importer procure special permission, this will have to be obtained. If these details have been attended to, the Istanbul department of health will issue a written statement that if the goods in question are received on the same day at the Istanbul customs there will be no objection to export; otherwise the ministry of health will decide, on receiving from the Istanbul health department the requisite information. If new regulations have not been adopted since permission was first asked, it will not be necessary to notify the consulate.

Export of narcotics is prohibited unless the Istanbul department of health notifies the customs that there is no objection. Vessels calling at Istanbul or passing vessels are to be under strict supervision in order that unlawful taking on board of narcotics may be prevented. Suspected goods are subject to rigorous examination.

Narcotics are exported exclusively from Istanbul, their export from any other port, even though the exporter is rightfully permitted and in the possession of a permission, being prohibited.

Proprietors of laboratories manufacturing narcotics are under obligation to forward to the Istanbul department of health a personally signed declaration in which account is given of the daily purchase of crude opium and its amount used in the preparation of opium derivates, salts, morphine and other preparations. The health department is to make a list of these declarations and forward it each week to the ministry of health and social assistance.

According to the narcotic law, laboratories manufacturing drugs and narcotics may sell their preparations within the country only to pharmacies and commercial houses of pharmaceutic preparations, and they may export only if the purchaser abroad is the proprietor of a pharmacy or of a commercial house of pharmaceutic preparations as according to the regulations of a special law. Within twenty-four hours, notification is to be made to the Istanbul health department of such sales by a declaration clearly stating the name and address and the kind and amount of the preparations sold. Such notifications are to be forwarded each week to the ministry of health.

It is compulsory that proprietors of laboratories manufacturing drugs and narcotics retain in their possession a confirmation signed and sealed by the proprietor or responsible director of the pharmacy or commercial house of pharmaceutic preparations as to the purchase made by them.

In order to investigate whether stock and preparations correspond with registrations and notifications and to make other necessary investigations in connection therewith, laboratories manufacturing drugs and narcotics are inspected by officers from the ministry of health and social assistance twice every month and at uncertain times. In case there is any suspicion as to the correctness of the records or entries or the true composition of stock or preparations present, the officers are to weigh and analyze all substances in order to prove the accuracy of the statements. While such investigation is being made, all manufacture is to stop and if necessary the depots of the finished preparations may be sealed.

Proprietors of laboratories are under obligation to facilitate the investigations by officers and be most explicit in regard to explanations concerning records, purchase of crude substances, sale and export of preparations, and the like.

Proprietors of laboratories not conforming with present requirements and unlawfully selling morphine and its derivates are liable to punishment according to article 403 of the penal code.

The application of these regulations is entrusted to the minister of national economy and the minister of health and social assistance.

Certification of Specialists

The application period for physicians wishing to obtain the specialist certificate having come to an end, the board of examiners appointed by the ministry of health and approved by the council of ministers have been invited to come to Ankara to investigate the applications. The board consisted of five members, three from the medical faculty and two from the army postgraduate school. They were Prof. Nechat Omer of the department of medicine of the medical faculty and former president of the university of Istanbul, Prof. Hamdi Suat of the department of pathology, Prof. Ahmed Kemel of the department of surgery, Prof. Refik Munir of the obstetric department, and Prof. Niyazi Ismet of the department of ophthalmology.

In all, 1,043 applications were received; 786 first class and 111 second class specialist certificates were granted, 146 applications being refused as they did not satisfy the examiners. The holders of first class certificates are eligible for appointments at governmental, provincial or municipal institutions and are licensed to conduct a private hospital or laboratory. The holders of second class certificates are not eligible for such appointments nor are they permitted to conduct a private hospital or laboratory, though they may engage in private practice as specialists, while those having been refused the specialist certificate may engage as general practitioners only. A list of the names of all receivers of first and second class certificates is to be forwarded to all medical societies and health directors.

JAPAN

(From Our Regular Correspondent)

June 5, 1931.

The Imperial Academy Prize

The twenty-first awarding ceremony of the Imperial Academy Prize was held, May 14, in the academy hall in Ueno Park, Tokyo. After the address of Dr. Sakurai, president of the academy, congratulations were offered by Baron Wakatsuki, prime minister, Mr. Tanaka, minister of education, and Mr. Ichiki, minister of the imperial household. Among the four scholars who were awarded the prize, Dr. H. Miyake especially acquired fame by his laborious work "On Cholelithiasis in Japan."

Death of Baron Dr. Kitasato

The sudden death of Baron Dr. Shibasaburo Kitasato was reported, June 14. He fell ill from cerebral hemorrhage at his residence at Azabu, Tokyo, on the morning of the 13th. He was born in Kumamoto, Kyushu, in 1852, and after completing the course at the Kumamoto Medical School he entered the Imperial University of Tokyo, where he was graduated in 1883. It was in 1885 that the home ministry sent him to Germany, where he could pursue his studies for seven years under Dr. Robert Koch, and it is said of him that he was one of the assistants of the great German scholar at the time when the cause of cholera was discovered by him. His great love toward the German teacher was made manifest by the yearly memorial ceremony and lectures held in honor of Dr. Robert Koch by him and his followers. In 1894 he was sent by the government to Hongkong, where an epidemic of bubonic plague broke out, and succeeded in discovering the cause with the aid of Dr. Aoyama, professor in the Tokyo Imperial University. His greatest medical achievement, however, was the discovery of the vaccine against diphtheria, which has saved so many lives since then. He established the Government Institute for Infectious Diseases and had been the chief till 1913, when the institute was placed under the management of the Imperial University of Tokyo. In 1916 he established the present Kitasato Institute and he assisted in establishing the medical department of the Keio University. In 1917 he was made a member of the house of peers, in 1924 was given the honor of baronage by the imperial household, and an order of the first class was awarded to him on his death bed. He was at the eightieth year of age. By his death five other societies besides the Kitasato Institute lost their chief, including the Japan Tuberculosis Society and the Tokyo Prefecture Physicians' Society.

New Medical Establishments

The Toyotama Public Segregation Hospital, which is in the suburbs of Tokyo and has a capacity of 160 beds, will be enlarged by the addition of 140 beds. The Tokyo Prefecture will erect a new building of four stories, covering 300 square meters.

The governor of Tokyo Prefecture has been petitioned to build a branch hospital of the Red Cross on Hachijo Island, in the Pacific Ocean 161 nautical miles south of Tokyo where there is no adequate medical equipment. The authorities are making investigations on the conditions of the island.

According to an agreement made by the technical commission of the school of public health, which held a meeting to select locations for health centers, one from cities and the other from farming villages, the home ministry has directed all local governors to see that the centers cooperate with the Rockefeller Foundation, since the centers are to be equipped with the help of the foundation. With the cooperation of the home ministry and the medical departments of both the Tokyo Imperial University and the Keio University, the health bureau of the Tokyo municipal office is going to establish an ideal health center in the city for the purpose of diffusing knowledge with regard to hygienic living, the prevention of infectious diseases and the promotion of public health. The authorities concerned are now making negotiations with the Rockefeller Foundation through our home ministry to ask for pecuniary help as a part of the fund for the new establishment, which will be begun next October. The experts trained there will work in the health centers of the city, where sanitary arrangements will be made against typhus fever, trachoma and tuberculosis. In spite of the present sanitary arrangements in the city there are still 866 cases of typhus fever, reported, June 2, which is 174 cases more in comparison with the total number of cases during last year.

A balneologic institute, which has been in the course of construction at Beppu, a hot springs resort in Kyushu, has been completed and will be open to the public soon.

The first hospital of the Nihon University, Tokyo, which stands at Koishikawa, was completed in February and has been opened to the public since March.

A new hospital under the system of industrial association will be established in Tokyo, at the instances of Dr. Inazo Nitobe, Dr. C. Yamamoto and Mr. Toyohiko Kagawa, a Christian socialist of renown. They held their first meeting at the Y. M. C. A. at Kanda, Tokyo, and decided to increase the membership to 1,000 as soon as the Tokyo prefectural office gives permission.

Woman Delegate to Vienna

To the International Female Physicians' Conference, which is to be held in Vienna next September, Dr. Kuniko Toda, an assistant professor in the Tokyo Women's Medical College, will be our delegate. She graduated at the college in 1916 and had been studying medical chemistry in the college till she was sent to Vienna last year to pursue her studies. She is expected to report, at the conference, on women's labor and factory hygiene in Japan as well as on medical chemistry.

Discovery of the Cause of So-Called Manchurian Fever

Dr. Kodama and his co-workers of the South Manchurian Sanitary Institute have published the results of their experimental pathologic studies which led them to the discovery of another proof of *Rickettsia* as the causative agent of typhus fever. They inoculated rabbits and other animals with blood taken from patients having the fever, which breaks out in South Manchuria from September to December. As the organisms resemble *Rickettsia prowazeki*, they have adopted the name *Rickettsia manchuriae* n. sp.

Marriages

ROBERT TUNSTALL PEIRCE, JR., Newport News, Va., to Miss Ruth Tinsley Hurt of Kenbridge, June 11.

ISRAEL FELMAN, Pittsburgh, to Miss Anne Clayman of Richmond, Va., in Washington, D. C., June 14.

CLIFTON KECK HIMMELSBACH, Drexel Hill, Pa., to Miss Virginia Martin of University, Va., recently.

CLAUDE C. COLEMAN, Richmond, Va., to Mrs. Ruth Threadcraft Putney of Middlesex County, June 16.

CYRIL JAMES CROZIER KENNEDY, Richmond, Va., to Miss Edna Rose Wright of Blackstone, recently.

WILLIAM LETT HARRIS to Mrs. Gertrude E. Burgess, both of Norfolk, Va., in New York, June 20.

OSCAR WILLIAM CRANZ, Charleston, W. Va., to Miss Flora Elizabeth Jett of Reedville, Va., June 4.

SAMUEL BYRON POPE, JR., Norfolk, Va., to Miss Emma Lucile Ryerson of Richmond, June 24.

GRANT R. ELLIOTT, Hamilton, Ohio, to Miss Beatrice V. Holland of Windsor, Va., June 6.

FRANK E. HANDY, Appalachia, Va., to Miss Ruth Harrison Smith of Big Stone Gap, June 17.

Deaths

Harry Clay Deaver ⊕ Philadelphia; University of Pennsylvania School of Medicine, 1885; member of the American Surgical Association and the American College of Surgeons; formerly professor of principles and practice of surgery and clinical surgery, Woman's Medical College of Pennsylvania; on the staffs of the Kensington Hospital for Women, Hospital of the Protestant Episcopal Church and the Children's Hospital; aged 70; died, June 25, of pneumonia.

Stephen Harrison Smith ⊕ Major, M. C., U. S. Army, Washington, D. C.; George Washington University Medical School, Washington, 1906; entered the Medical Corps of the U. S. Army as a first lieutenant in 1913, and in 1917 was made a major; aged 48; stationed at the Walter Reed General Hospital, where he died, July 4, of peritonitis and acute gangrenous appendicitis.

Luther Martin Marvel ⊕ Weldon, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; past president of the Dewitt County Medical Society; aged 58; died, June 14, in the Warner Hospital, Clinton, of injuries received when the automobile in which he was driving was struck by a train.

William Shirey Keister, Towson, Md.; Johns Hopkins University School of Medicine, Baltimore, 1914; member of the Medical and Chirurgical Faculty of Maryland; formerly health officer of Prince Georges County, Md., and Decatur, Ill.; aged 43; died, July 3, in the Walter Reed General Hospital, Washington, D. C., of septicemia.

Joseph Henry Hathaway, Detroit; Johns Hopkins University School of Medicine, Baltimore, 1901; instructor in anatomy at the University of Michigan Medical School, Ann Arbor; aged 56; died, June 12, in the Wellesley Hospital, Toronto, Ont., Canada, of intestinal obstruction and ruptured appendix.

Meyer Maurice Stark ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1899; member of the American College of Surgeons; served during the World War; on the staffs of the Community, Mount Sinai, Sydenham and Knickerbocker hospitals; aged 54; died, June 18, of heart disease.

Jeremiah Allen Palmer, Erie, Kan.; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1887; Victoria University Medical Department, Coburg, Ont., Canada, 1887; aged 65; died, June 6, in a hospital at Chanute, of cerebral hemorrhage following a prostatectomy.

James D. Osborn, Sr., Cleburne, Texas; University of Virginia Department of Medicine, Charlottesville, 1866; member of the Medical Association of the State of Texas; Civil War veteran; aged 85; died, April 29, in San Antonio, of carcinoma of the nose.

William W. L. Cissel, Highland, Md.; Medical Department of Columbian University, Washington, D. C., 1886; member of the Medical and Chirurgical Faculty of Maryland; aged 66; died, May 22, in the Montgomery County Hospital, Olney, of pneumonia.

Francis J. Welsh ⊕ Kalamazoo, Mich.; University of Michigan Medical School, Ann Arbor, 1896; aged 60; on the staff of the Borgess Hospital, where he died, June 16, of anemia, due to repeated small hemorrhages and atrophy of the gastric mucosa.

Henry D. Leh, Egypt, Pa.; University of Maryland School of Medicine, Baltimore, 1884; formerly member of the board of education and physician to the board of health of Whitehall township; aged 69; died, June 17, of endocarditis and paralysis agitans.

Arthur Lewis Druet, Larchwood, Iowa; Medical Department of Drake University, Des Moines, 1898; member of the Iowa State Medical Society; served during the World War; aged 55; died, May 28, of carcinoma of the penis.

Frederick Clinton Lewitt ⊕ San Francisco; University of California Medical School, 1908; instructor in otology, rhinology and laryngology at his alma mater; served during the World War; aged 48; died, June 16, of pneumonia.

William Augustus Johnson ⊕ Lowell, Mass.; Jefferson Medical College of Philadelphia, 1882; on the staffs of the Lowell General Hospital and St. John's Hospital; aged 72; died, June 2, of cerebral hemorrhage.

James Brown Thornton, Boston; Medical School of Maine, Portland, 1885; member of the Massachusetts Medical Society; one of the founders of the Boston Floating Hospital; aged 69; died, May 20, at Watertown, Mass.

Ralph Atherton Gilfry ⊕ Milwaukee; University of Nebraska College of Medicine, Omaha, 1926; aged 28; died, June 16, in the Columbia Hospital, of influenza, pericarditis and tuberculosis of the right lung.

Charles S. Gere, Chemung, N. Y.; University of Buffalo School of Medicine, 1879; health officer of Chemung for thirty-five years; aged 73; died suddenly, May 25, of diabetes mellitus and cerebral hemorrhage.

Marion Shmuleona Finkel Kogan, Chicago; Odessa State Medical Institute, Odessa, Ukraine, Russia, 1922; aged 33; died, June 10, in the Mount Sinai Hospital, of peritonitis, following an episiotomy.

Henry Lee Brannon, Marion, Ala.; Vanderbilt University School of Medicine, Nashville, Tenn., 1885; aged 66; died, April 29, in the Memorial Hospital, Selma, following an operation for appendicitis.

Mandred Leslie Hanks, Corbet, Texas; Barnes Medical College, St. Louis, 1902; member of the Medical Association of the State of Texas; aged 59; died suddenly, June 11, of hypertension.

Harry Hemming Gormly, New York; Albany Medical College, 1900; aged 55; died, April 9, in the San Francisco (Calif.) County Hospital, of hemorrhage due to esophageal varices.

Clarence Carson Carter, Lancaster, Ohio; Medical College of Ohio, Cincinnati, 1884; member of the Ohio State Medical Association; aged 68; died, May 6, of cardiovascular renal disease.

John Joseph Bowes, Peoria, Ill.; Medical Department of Drake University, Des Moines, 1900; served during the World War; on the staff of the Peoria State Hospital; aged 54; died, May 9.

James Borlin Klingensmith, Sebring, Ohio; Western Pennsylvania Medical College, Pittsburgh, 1897; member of the Ohio State Medical Association; aged 57; died, June 13.

Willet E. Hughes, Ashley, Pa.; Jefferson Medical College of Philadelphia, 1878; member of the Medical Society of the State of Pennsylvania; aged 74; died, June 7, in Wilkes-Barre.

Richard Matthew English ⊕ Danbury, Conn.; Yale University School of Medicine, New Haven, 1898; veteran of the Spanish-American and World wars; aged 58; died, in June.

Clarence T. Skipper, Jacksonville, Fla.; Atlanta College of Physicians and Surgeons, 1913; member of the Florida Medical Association; aged 50; died, May 26, of pneumonia.

James Allen Blair, Binghamton, N. Y.; Niagara University Medical Department, Buffalo, 1893; aged 64; died, May 29, of cerebral hemorrhage, myocarditis and nephritis.

William Libby Pearson ⊕ Schenectady, N. Y.; Albany Medical College, 1878; on the staff of the Ellis Hospital; aged 82; died, June 19, of arteriosclerosis and nephritis.

James S. Richardson, Wentzville, Mo.; St. Louis College of Physicians and Surgeons, 1901; aged 51; died, June 3, in St. Joseph's Hospital, St. Charles, of pneumonia.

Charles Malone McMillan, Represa, Calif.; St. Louis College of Physicians and Surgeons, 1908; aged 59; died, April 26, of coronary thrombosis and subacute pericarditis.

Ira Barton, Fresno, Calif.; University of Michigan Medical School, Ann Arbor, 1869; aged 87; died, May 9, of chronic myocarditis, arteriosclerosis and hypertension.

Robert Burton Walker ✠ Dallas, Texas; University of Arkansas School of Medicine, Little Rock, 1918; aged 35; died, May 30, of pulmonary tuberculosis.

Henry William Fred Bartells, Chicago; Rush Medical College, Chicago, 1885; aged 68; died, June 25, in St. Elizabeth's Hospital, of cerebral hemorrhage.

Emilio J. Sarlabous ✠ New York; Medical Department of the University of the City of New York, 1883; aged 62; died, June 13, of chronic myocarditis.

Thomas Davis Maher ✠ San Francisco; University of California Medical School, 1896; aged 57; died, June 19, in St. Luke's Hospital, of heart disease.

Robert Stroud Kropp, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1919; aged 38; was found dead, June 26, of heart disease.

John Huffnagle, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1866; aged 87; died, June 18, of acute parenchymatous nephritis.

Edward Lowenbein, New York; Medical Department of the University of the City of New York, 1892; aged 65; died, June 13, of meningo-encephalitis.

Marie Clare Boyd, Cynthiana, Ky.; Medical College of Ohio, Cincinnati, 1903; aged 69; died, April 22, in a hospital at Cleveland, of diabetes mellitus.

Daniel K. Dickinson, Los Angeles; Missouri Medical College, St. Louis, 1877; aged 82; died, May 22, of cerebral hemorrhage and arteriosclerosis.

Fred Detmar Northrup ✠ South Pasadena, Calif.; Kansas City Hahnemann Medical College, 1904; aged 56; died, June 7, of coronary thrombosis.

Lewis S. Hodges, Tekonsha, Mich.; University of Michigan Medical School, Ann Arbor, 1904; aged 57; died, June 16, in Long Beach, Calif.

Patrick S. Dougherty, Los Angeles; Chicago Medical College, 1884; aged 84; died, May 20, of fracture of the surgical neck of the femur.

Clarence Bronson Kenney ✠ Winchendon, Mass.; Tufts College Medical School, Boston, 1910; aged 45; died, July 1, of angina pectoris.

Charles Cooper Spear, Maple Shade, N. J.; Medico-Chirurgical College of Philadelphia, 1898; aged 56; died, May 2, of pneumonia.

Henry Hamilton Cate, Pompton Lakes, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1888; aged 71; died, May 26.

Joseph Patrick Egan, Long Beach, Calif.; Medico-Chirurgical College of Philadelphia, 1910; aged 44; died, April 29.

Robert Lincoln Graham, New York; Long Island College Hospital, Brooklyn, 1893; aged 59; died, suddenly, June 20.

Sadie Cecelia Doran, Casper, Wyo.; Creighton University School of Medicine, Omaha, 1909; aged 71; died, April 18.

Thomas Wignall Shaw ✠ Whitman, Mass.; Tufts College Medical School, Boston, 1897; aged 62; died, June 2.

Joseph C. Collester, Whittier, Calif.; Chicago Homeopathic Medical College, 1890; aged 85; died, May 13.

Louise Bacon Deal ✠ San Francisco; Cooper Medical College, San Francisco, 1894; aged 65; died, June 16.

John Charles Ludwig, Corpus Christi, Texas; University of Berlin, Germany, 1865; aged 93; died, May 2.

Oscar P. Griggs, Ashtabula, Ohio; Homeopathic Hospital College, Cleveland, 1881; aged 80; died, in May.

Hubert L. Root, Kinsman, Ohio; Starling Medical College, Columbus, 1894; aged 63; died, May 5.

Carl Rudolf Krone, Berkeley, Calif.; Chicago Medical College, 1891; aged 71; died, May 29.

Alonzo Logan, Concord, Ga.; Savannah Medical College, 1871; aged 81; died, May 12.

Fred D. Woodworth, Onondaga, Mich. (licensed, Michigan, 1900); aged 84; died, May 21.

Correspondence

IMMUNOLOGIC RECAPITULATION

To the Editor:—Apropos of your recent editorial "Phylogenetic Immunologic Recapitulation?" (THE JOURNAL, March 21), additional examples may be adduced in support of the attractive suggestion that a "dynamic protein specificity" is more to the point in immunology than the assumption that normal human proteins are unchanged in specificity from the time the ovum is fertilized to its death. Antisheep hemolysin, which 95 per cent of us possess, is absent at birth. It appears early in the life of the child, reaches its highest titer in early adulthood, and is less noticeably present as one ages (Parr, L. W.: *J. Infect. Dis.* **46**:173 [March] 1930). Why, it may be asked, should any one possess an antisheep hemolysin? And why is it that about 5 per cent of the population fail to develop it? This lack of development may be well put on the basis of an arrested physiologic maturation.

As a further illustration, the isohemagglutinins are only partially formed at birth. They appear in all children, if they are to appear at all, in from a few months to two years. It is known, too, that "complement" is not found in the new-born child to the degree to which it later appears. An absolute maturation arrest in "complement" has been demonstrated in the complement-free guinea-pigs recorded by H. D. Moore (*J. Immunol.* **4**:425 [Nov.] 1919) and subsequently studied by Coca, by Ecker and by Hyde.

Again, it seems to be established that in diphtheria, at least, the protein specificity can be definitely influenced by the removal of the tonsils and the adenoids (Doull, J. A.: *Pub. Health Rep.* **39**:1833 [Aug. 1] 1924). That this is not merely a matter of the elimination of an avenue of infection in the child is suggested by the work of Schick and Topper (*Am. J. Dis. Child.* **38**:929 [Nov.] 1929), who found that previously Schick positive children became Schick negative within six months after tonsillectomy.

LELAND W. PARR, PH.D., Andalusia, Ala.

[COMMENT.—It is a tempting hypothesis to assume that there is an inborn "protein maturation potential" that accounts for the apparently spontaneous appearance of new protein specificities during childhood and early adult life, with arrests, perversions and "mutations" of this normal "physiologic ripening" to account for individual and racial differences. Final proof of this phylogenetic theory, however, will necessitate detailed knowledge of the minor, "latent," "overlapping" or "heterophil" antigenicities in habitual foods and normal bacterial flora.—ED.]

CAROTINEMIA

To the Editor:—I wish to offer a correction in the article appearing in THE JOURNAL, June 27, on carotinemia by Drs. Levin and Silvers. I refer to the reference which they make to a publication of mine which appeared in the *American Journal of the Medical Sciences* in January, 1928. In that discussion I reported a marked case of carotinemia that occurred in a nondiabetic adult.

These authors failed to get my argument when they stated that the cases which they reported were in nondiabetic adults and that most adult cases reported were in patients with diabetes. I emphasized in my discussion that the patient did not have diabetes and had been maintained on a high vegetable diet consisting largely of carrots and squash. She lived in the home with a brother who prepared the food and had a phobia for an exclusive vegetable diet. These cases are not difficult to differentiate from a true jaundice by reason of the fact that the sclerae are not pigmented, as always in cases of true jaundice.

WILLARD C. STONER, M.D., Cleveland.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CEREBRAL ARTERIOSCLEROSIS

To the Editor:—I am physician to the college here and have a case in which I am deeply interested and concerning which I should like your advice and opinion. A woman of a high intellectual type suffers from a throbbing, pounding noise that appears to be in the middle of her head. She has been bothered with this for a year and a half; it is present all the time and varies in its intensity from an exceedingly faint throbbing to an intense thundering throbbing, at which onsets she is weak and must go to bed. She passed through the menopause two years ago without any trouble. The first attack came in July on a warm day just after she had carried many books upstairs for shipment. At that time the noise was faint and did not last long. She then visited a mountain resort, took a swim in cold water, became chilled, and had a cold. At this time the throbbing appeared again. She has been treated and examined by experts but has found no relief. Two fine sets of roentgenograms fail to disclose any pathologic changes relative to the sinus. The kidney test is negative. The blood pressure is 110 systolic and 80 diastolic. The red count is 4,675,000; white count, 5,937; hemoglobin, 14. The chest and heart are normal.

J. W. JACKSON, M.D., Clarksville, Tenn.

ANSWER.—The patient may be suffering from cerebral arteriosclerosis, which produces quite frequently this throbbing noise without objective phenomena. There is little that can be done except prescribing sedatives. It is understood that the supposition on which the diagnosis of arteriosclerosis is made is that there are no organic neurologic signs or symptoms which might suggest an intracranial tumor.

"SILICOSIS AND WORKMEN'S COMPENSATION"

To the Editor:—I was greatly interested in reading the article "Silicosis and Workmen's Compensation" (THE JOURNAL, April 11, p. 1252). For a number of years in Ohio we have fought against the wide open law, making all diseases incurred in the course of employment or occupation compensable, because we have felt that such a law was a menace to the physician in private practice. Under such a law, all one has to do is to claim that a disability is due to occupation and it must be disproved by the employer; under such a law, claims for all sorts of nonoccupational illnesses may be made which, if allowed by the industrial commission, will place the care of these cases in the medical departments of some industries carrying their own risks to the detriment of physicians in private practice, or will place them under state paid care. Particularly have we opposed the inclusion of silicosis in the law of Ohio, unless safeguarded in a separate article such as is done by the Province of Ontario. Lanza, who is thoroughly familiar with the subject, tells me that it is not easy to diagnose silicosis from the roentgenogram, but in reality it is a difficult proposition. I believe that this has been borne out by the work done for the Ontario commission, and that done in Oklahoma by the Metropolitan Life Insurance Company. If silicosis is placed in the law and not properly safeguarded, as it is in Ontario, it seems to me that it would open to compensation most of the diseases of the heart and lungs. I have analyzed the lungs of a tramp dead of syphilis and found nearly 1 per cent silica; and in a man dead of silicosis, I found about 24 per cent. Both had silicosis. I do not believe that the manufacturers in Ohio resent the listing of silicosis for compensation provided it is safeguarded, and I am quite familiar with the attempts that have been made to do this since the inception of the occupational disease law in Ohio. It does not need favorable common law decisions allowing damages for workers incurring characteristic occupational diseases to stimulate intelligent manufacturers of today to include any occupational disease in the law, but I do not believe the intelligent manufacturers of today will ever relish a wide open bill; and when these wide open bills are allowed in every state in the Union it is my impression that it will be one long step toward taking private practice from those physicians who make their living thereby. Incidentally, I believe that silicosis is compensated for in New York. I will appreciate a reply, stating the attitude of THE JOURNAL in regard to the wide open bill, or the inclusion of diseases which are controversial without proper protection. I am asking this merely for my own information because, while silicosis is no problem in this company, I have consistently fought its inclusion in the law except under the condition noted. The article mentioned gives the impression that you favor a wide open bill.

DONALD LOWE,
Goodrich Tire and Rubber Company, Akron, Ohio.

ANSWER.—This statement has been referred to a specialist in the field of occupational diseases. He makes the following comments:

"The director of the Division of Industrial Hygiene for New York State advises that silicosis is not compensable under the occupational disease act of that state.

"This inquiry implies that Dr. Anthony J. Lanza of the Metropolitan Life Insurance Company is opposed to compensation for silicosis. In a report on silicosis in rock drillers in New York City, sponsored and supervised by the Silicosis Committee, of which Dr. Lanza was a member, it is stated: '. . . Clinically the disease can be recognized with certainty only by means of radiographic examinations of the chest. . . .' The roentgen evidence of silicosis is sufficiently precise to permit gradation into four stages, with reference to the extent of involvement. Three of these stages were demarked by Childs and Lanza in 1917. In 1929, Dr. Lanza, as chairman of the American Public Health Association's Committee on Standard Practices in the Compensation of Occupational Diseases, reported: '. . . The difficulties of administering these laws fairly are not greater, perhaps not as great, as those encountered in the enforcement of any other type of law. . . .'

"The opponents to the provision of workmen's compensation for occupational diseases often fail to recognize any intermediate zone between a limited schedule system and, to use the language of this inquiry, 'a wide open law.' It is to be admitted that most work, in the course of years, leads to ill defined impairment of all workers. As examples may be mentioned some forms of cardiac disease and arthritis. With rare exception there has been no contention that these impairments should lead to compensation when a stage of total or partial disability is reached. On the other hand, there are many characteristic or specific occupational diseases readily lending themselves to diagnosis, and traceable to work as the causative factor. It is to this group that industrial compensation should be extended. It is manifestly unjust for one worker in a given factory, who breathes in lead dusts and develops characteristic lead poisoning, to be compensated, while another worker, who breathes in siliceous dusts and develops characteristic silicosis, is not compensated. An equal injustice is done when of two workers handling phenol one develops skin lesions and gangrene as a result of exposure to that chemical's action and is compensated, and the other develops systemic phenol poisoning following absorption of that chemical through the skin and is not compensated, because the schedule of occupational diseases recognizes skin lesions but fails to provide coverage for systemic poisoning.

"The much used argument that occupational diseases should not be provided for under systems of liability insurance, because they are not susceptible to diagnosis, is futile. Let it be said that occupational diseases as a class have manifestations permitting diagnoses on an exact basis, with no greater difficulty than that attending the diagnosis of any other class of disease. It may be true that physicians are less familiar with occupational diseases, and thus are less competent to make diagnoses. If so, this is an onus that rests on the medical profession and does not constitute a proper reason for withholding compensation from the disabled worker whose characteristic condition grows out of employment. It is granted that some cases of silicosis are difficult to diagnose. This is equally true of some cases of gallbladder disease or some skull fractures. If there should be any general agreement on the part of the medical profession that the requirements of social justice to workers disabled by characteristic silicosis resulting from employment should not be contemplated solely because the situations involved are difficult (not impossible) for physicians, then it would be high time for the medical profession to run up the white flag of defeat.

"This inquiry further states: 'Under such a law, all one has to do is to claim that a disability is due to occupation and it must be disproved by the employer.' No Ohio law places the responsibility of defense against claims on the employer. Perusal of the law for that state reveals that its compensation insurance is maintained as a state monopoly, and that the responsibility for conserving its funds rests with the industrial commission. Many claims are denied without approaching the employer. By its own first hand investigations the commission collects evidence relative to claims.

"Later this inquiry states that such claims 'will place the care of these cases in the medical departments of some industries carrying their own risks to the detriment of physicians in private practice, or will place them under state paid care.' Let it be said (1) that the Ohio law provides that any injured employee, or one sick from compensable occupational disease, may freely elect his own physician; (2) that not more than 0.1 per cent of Ohio's manufacturers carry their own risks; (3) that Ohio maintains no medical service for the care of patients, although in certain instances claimants may be referred to private physicians.

"This inquiry further contains this statement: 'I have analyzed the lungs of a tramp dead of syphilis and found nearly 1 per cent silica; and in a man dead of silicosis, I found about 24 per cent. Both had silicosis.' It is granted that workmen with silicosis may have other diseases, and may be run over by freight trains and automobiles just as normal persons, and those, with heart disease or nephritis.

"It is further granted that roentgen evidence of technical silicosis may exist in the absence of disability from that disease. This has been shown by Kindel and Hayhurst, among workers in the sandstone quarries of Ohio. This roentgen evidence on a quantitative basis provides some proof of the probability of disability from silicosis or the absence thereof.

"The shortcomings of the schedule system of occupational disease compensation is suggested in recent developments in Ohio. The legislature of 1929 added to the compensable items of occupational diseases three new conditions. One month ago, officials of the capitol stated that no single case has been reported for two of the items since scheduled. Just prior to this legislative action, Kindel and Hayhurst, officials of the Ohio State Department of Health, reported '. . . a positive diagnosis of silicosis was made in 30 per cent of the 919 men (sandstone quarry workers in Ohio) x-rayed. . . . .' If all of these conditions are true, it appears that a generous state provides for occupational diseases that do not exist, or are at best rare, but holds aloof from at least one, shown by its own investigators to involve nearly one third of a group of 919 workers examined."

USE OF OSCILLOMETER

To the Editor:—I was surprised to note a reply in Queries and Minor Notes regarding the value of the oscillometer in determining the patency of the blood vessels. The authority who answered this question apparently overlooked my work with this instrument, which was published in THE JOURNAL, June 4, 1927, page 1780. In this paper I called attention to the fact that palpation of the vessels may be misleading particularly in incipient cases of thrombo-angiitis obliterans. This work has been corroborated by Simpson at the Mayo Clinic in a paper published in the February issue of the *American Heart Journal.*

SAUL S. SAMUELS, M.D., New York.

SKIN PREPARATION FOR OPERATION

To the Editor:—What is the general opinion as to the merits of soap and water or iodine preparation of the skin of the abdomen before operating? Which of these, or what other method of preoperative preparation, is considered as acceptable in a first class hospital? Kindly withhold name.

M.D., Nebraska.

ANSWER.—The object of skin preparation for surgical operation is to diminish the possibility of wound infection by organisms lying on the surface or living in the superficial layers of the skin. No method of preparation in use today is productive of bacteriologic sterilization, but the number of micro-organisms can be reduced to a minimum and rendered innocuous by appropriate means. The ideal skin disinfectant should be simple in its application, nonirritating, and capable of penetrating the skin to some depth. It should be effective in destroying in a short time all or most of the organisms that are found in the skin and it should do nothing to prevent or delay the clean healing of the wound. Iodine, in the form of the tincture, is the disinfectant most commonly used. According to Grossich, the originator of the iodine method, water swells the superficial layers of the skin and interferes with penetration of the iodine. He therefore applies it without preliminary scrubbing and permits it to dry spontaneously. Its disadvantages are that it has to be applied to a dry skin, which often means a dirty skin, that it may produce irritation of the skin of the patient and the eyes of the operator, and that it may cause intraperitoneal adhesions after laparotomies in which the viscera are brought out on the abdominal wall. In addition, some experimental workers have shown that its efficacy is far less than required or expected, and Moynihan states that he has rarely seen a wound heal with all those attributes which are necessary before one is entitled to say that it is "perfect" when iodine alone is applied. The most universally used method of preparing the skin is carried out as follows: 1. Abundant washing with water and soap, after preliminary shaving, over an extensive area. 2. Application, with gentle friction, of alcohol, 70 per cent, red mercuric iodide, or mercuric oxycyanide, 1:2,000, over the same area. 3. Drying by a sterile towel or by exposure to the air for several minutes or applications of ether, which also aids in removing any grease and scales that may be present. 4. Painting the prepared area with a 2 to 5 per cent solution of iodine, which is wiped off with 70 per cent alcohol. When the towels are fixed about the operative area, a further application of tincture of iodine and alcohol may be made. In step 4, instead of iodine, 3 to 5 per cent trinitrophenol (picric acid), 1 to 2 per cent mercurochrome-220 soluble, 1:1,000 metaphen or an acid alcohol solution of mercuric chloride (Harrington's solution: Alcohol U. S. P., 640 cc.; hydrochloric acid U. S. P., 60 cc.; corrosive mercuric chloride, 0.8 Gm.; water, 360 cc.) are used by some. Iodine, however, still seems to be the favorite of the majority.

EFFECTS OF ELECTRIC ARC ON HEALTH

To the Editor:—Where can one procure data on the effects of the electric arc on the health of individuals working about electric furnaces?

N. I. ARDAN, M.D., Niagara Falls, N. Y.

ANSWER.—The electric arc, as exemplified by the electric furnace, is the potential source of three distinct forms of damage to exposed workmen other than mechanical injuries or burns. These are excessive heat, electrical shock, and rays, including excessive amount of ultraviolet rays. In addition, there is an ill defined (and possibly nonexistent) hazard in the electric "field." The electric furnace is a less likely source of this hazard than such other electrical appliances as high frequency devices, accumulators and transformers. No known publications fully cover this possible hazard, but some information may be found in the following:

Industrial Hazards Caused by Electricity, International Labor Office, Occupation and Health, number 95.

Jellinek, S.: Observations on Work with Electricity, cited in the foregoing.

Kahler, H.; Chalkley, H. W., and Voegtlin, Carl: The Nature of the Effect of a High-Frequency Electric Field upon Paramoecium, *Pub. Health Rep.* **44**: 339 (Feb. 15) 1929.

Schereschewsky, J. W.: The Physiological Effects of Currents of Very High Frequency, *Pub. Health Rep.* **41**: 1939 (Sept. 10) 1926.

From the first publication in the list, these excerpts are taken:

Not only does atmospheric electricity give out electrical energy constantly, but this happens also with electricity applied technically, an example of which is provided by the waves produced by currents of high tension. We are all under the influence of this electrical energy, but those who have to work in an electrical field are surrounded by a particularly dense flux.

Much has been written on the subject of the general ill effects experienced by engineers and workmen who work in transforming stations at high tension, in laboratories or near switchboards. In 1900 Jellinek, in his "Observations on Work with Electricity" (Beobachtungen an Elektrizitätsarbeiten), remarked on a rigidity of the peripheral arteries (radial and temporal). Thus, of eighty workmen employed in electrical works it was possible to find twenty absolutely positive cases, between 20 and 30 years of age, showing this arterial rigidity: the radial artery had the hardness of a quill and frequently slight sinuosities; the temporal arteries stood out noticeably and showed sinuosities; the pulsations were strong. These symptoms were sometimes accompanied by an increase in the tendon reflexes and periostitis. It is becoming more and more recognized that old workers are markedly nervous, so much so that the manager of a works said that "old electricians are like accumulators freshly charged."

Since day by day much work is carried out in electric fields of dense flux without having attracted attention as the source of impairment, this theoretical hazard is at this time not regarded as direful or even proved.

BLEACHING OF RED SCAR

To the Editor:—Can you give me any information relative to a chemical to bleach the red scar as left by a burn?

E. J. BALL, M.D., Nekoosa, Wis.

ANSWER.—No such chemical is known. The redness is due to excessive blood in circulation. As the scar grows older, the vessels shrink and the scar becomes paler. No means of hastening this process is known.

HYPERTROPHIC OSTEARTHRITIS

To the Editor:—What could be done with a patient whose roentgen examination shows the following: A stereo apparatus exposure of the lumbar region presents evidence of hypertrophic osteartheritis in the region of the first, second and third vertebrae; there is no definite evidence of fracture. The sacro-iliac joints appear fairly clear. Both hip joints are fairly clear. There is possibly a slight degree of hypertrophic change. A lateral exposure of the lumbar spine was not made. Please omit name.

E. A., Roumania.

ANSWER.—The answer to this query presupposes that the patient complained of symptoms; namely, pain, limitation of motion and weakness, stiffness, tenderness to pressure and sensitiveness to movement.

A comprehensive outline of treatment is as follows: Recumbency in bed. The mattress should be made rigid by insertion of a wooden frame or board placed transversely across the bed. A roll of blanket material or soft pillow should be placed under the lumbar spine. Head traction by means of a muslin halter with a wire spreader, a pulley over which passes a rope, suspended from which is a weight varying from 3 to 10 pounds. This should be modified according to the patient's tolerance and comfort. Belt traction by means of pelvic belt to which are secured two long, 1 inch webbing straps which go to the foot of the bed and are attached to weights for traction.

Application of heat to the lumbar spine. Physical therapy daily, including radiant heat, gentle massage and diathermy. At the end of a period of from one to four weeks, depending on the patient's progress, the application of a plaster-of-paris body cast to be worn while a Taylor spine brace is made. When the brace is completed the cast should be removed and the brace applied. Physical therapy should be continued thereafter. As soon as all pain and tenderness have ceased, posture exercises are indicated.

Every search should be made for foci of infection, especially in the teeth, tonsils, sinuses and the gastro-intestinal, genito-urinary and respiratory tracts. Vaccines or foreign protein are indicated if there is evidence of infectious arthritis.

A well balanced diet limiting the intake of meat, fish, eggs and sweets, should be prescribed. One should encourage fluids freely. Salicylates for pain are indicated at the onset.

DIAGNOSIS OF VERTEBRAL DISEASE

To the Editor:—A white man, aged 55, a laborer, felt something give away in the lower part of the back, June 22, 1920, while picking up an iron countershaft. Examination then revealed a bilateral hernia, which was repaired. Pains in the lower part of the back continued and for two or three years following the injury the back was strapped with adhesive plaster. These pains have persisted. In addition, the man now also suffers from weakness of both legs and difficulty in walking. Physical examination is negative except that there is a moderate degree of arteriosclerosis; the patient walks with a cane and drags the right foot; there are myoclonic movements of the legs and arms, and the lumbar spine is flattened, with muscle spasm and limitation of motions. Neurologic and mental examinations are negative. Roentgen examination of the lumbar spine, Feb. 21, 1931, showed a calcified shadow between the first and second lumbar vertebrae, which appeared in the position of the ligaments. The lumbar and lower dorsal spines showed hypertrophic arthritis. The calcified shadow was probably due to an old injury to the ligaments of the spine at this point. All other laboratory examinations, including the Wassermann test, were negative. How is one going to account for the patient's symptoms and the conditions found? Do you think that the patient has a lesion of the extrapyramidal tract? If so, do you think it is a sequel to his injury of June, 1920? March 7, 1931, THE JOURNAL published an abstract of post-traumatic extrapyramidal injury from *Hygiea*. Do you think that this case is comparable? Could you give me any further reference to the literature pertaining to my case?

ISIDORE I. LEVY, M.D., Baltimore.

ANSWER.—The diagnosis of post-traumatic extrapyramidal injury is possible, although not probable. The differential diagnoses to be considered in this case include: 1. The location—whether the lesion is in the lower lumbar vertebra, the lumbosacral joint, the right or the left sacro-iliac. 2. As to the various conditions that must be considered in this differential diagnosis, one would suggest: (1) arthritis; (2) Kümmel disease, or post-traumatic spondylitis; (3) congenital anomalies with a superimposed trauma in the presence of a focus of infection; (4) calcinosis intervertebralis or calcification of the nucleus pulposus; (5) intermittent claudication of the back; (6) ischemic lumbago; (7) fracture; (8) dislocation; (9) spondylolisthesis or forward slipping of a vertebra; (10) calcified iliolumbar ligaments; (11) spinal cord tumor.

One would suggest reference to articles by Kümmel or S. Fosdick Jones. Concerning calcinosis intervertebralis, articles by Ross Smith, Schmorl and Calve are recommended. An article on ischemic lumbago was written by J. Ramsey Hunt.

PERSISTENT SINUS FROM NEPHRECTOMY WOUND

To the Editor:—A patient came to me for treatment of a persistent sinus from a nephrectomy wound in his right side. He was operated on for renal calculi and pyelonephroses in April, 1930, at which time the right kidney was removed. In July, 1930, an abscess was opened in the region of the original operation, the wound split open and packed with gauze and allowed to granulate. Since that time, the wound has continued to drain persistently. In February, 1931, the patient came to me for treatment. I removed a large piece of gauze packing from the wound, which evidently had been there since the second operation. I have dressed the wound repeatedly since that time, yet it persists in draining. I have made smears and inoculations for the tubercle bacillus, yet these were all negative. I have curetted the wound, used silver nitrate, used gauze and iodoform packs, in an effort to get closure, yet these have all failed. I had thought of using bismuth paste but am doubtful whether a permanent closure will result. I have continued repeatedly to explore the sinus with probes in an effort to find any other foreign body but have not succeeded in doing so. The sinus is about three inches deep. What further treatment would you advise? Please omit name.

M.D., Texas.

ANSWER.—In view of the fact that a foreign body was removed from this wound, and because of the fact that the sinus persists, it would lead one to suspect that another piece of gauze is still present in the wound. Therefore, it would seem justifiable to advise revision of this wound, that is, the patient should be given an anesthetic and the wound reopened and most carefully explored for a foreign body. It is possible that only one of two pieces of gauze was removed. If there is no gauze present, revision of the wound with generous curettage will probably result in complete repair. This wound should be laid wide open and explored for foreign bodies.

ERYTHEMA AB IGNE

To the Editor:—I have a patient, a woman, aged 27, slightly anemic, with health generally fair, good teeth and bad tonsils, which I am going to remove. She developed in November, 1930, on the inner sides of both legs, extending from the knees to the ankles, a dark brown mottled condition, brown streaks about one-fourth inch wide running a tortuous course with white healthy skin between. There is no pain or itching but on being near the fire the skin has a tendency to get red. Tell me what it is and the treatment if any.

C. A. MILLER, M.D., Thedford, Neb.

ANSWER.—The condition is known as erythema ab igne and results from repeated exposure to mild heat. The application of a zinc oxide paste (zinc oxide and starch, of each 25 per cent, petrolatum or rose ointment, 50 per cent) spread thinly, and avoidance of the heat, ought to result in the gradual subsidence of the hypersensitiveness. The pigment may remain for a long time after this.

ASPERGILLOSIS OF MAXILLARY SINUS

To the Editor:—I have a patient with a chronic maxillary sinusitis. Some months ago another physician opened a window into this sinus and found *Aspergillus niger*. I have treated him for some time with various irrigations and have advised him to have a radical operation; he informs me that the other physician advised against a radical operation when this organism is present on the ground of its being dangerous. I have never had a case of this character and would appreciate any information you might give me.

LEWIS K. BECK, M.D., San Antonio, Texas.

ANSWER.—A radical antrum operation performed with an infection of aspergillus present is no more dangerous than in other cases of chronic sinusitis. Radical operations, such as the Luc-Caldwell, offer considerable promise of a cure in such tests. The use of 2 or 3 per cent salicylic acid in 70 per cent alcohol in the antral cavity will often cause the disappearance of this fungus. Aspergillosis of the maxillary sinus is of rather infrequent occurrence.

MALE HORMONE AND REACTIVATION

To the Editor:—Will you kindly furnish me with available information concerning the Dr. Harry Benjamin hormone treatment for male impotence?

M.D., Havana, Cuba.

ANSWER.—The hormone and the method of treatment are discussed in two articles, as follows:

Funk, Casimir; Harrow, Benjamin; and Lejwa, A.: The Male Hormone, *Am. J. Physiol.* **92**: 440 (March) 1930.

Benjamin, Harry: The Latest Endocrine Advance: The Male Hormone, *M. J. & Rec.* **131**: 545 (June 4) 1930.

The male hormone referred to is apparently an extract made from the urine. The method described in the paper by Funk is briefly as follows:

Ten liters of male urine is collected and preserved with a small amount of thymol. The urine is acidified with hydrochloric acid until acid to congo red paper. A mixture of 10 liters of urine with 2 liters of chloroform is gently heated under a reflux for about eight hours. A test is made at least once during the process to make sure that the acidity is maintained. The product is cooled and most of the watery layer poured off. Residue is transferred to a separatory funnel and the chloroform layer drawn off. The emulsion between the chloroform layer and the residual urine is drawn off, filtered, and washed with chloroform. The filtrate is separated in a funnel, the chloroform fraction drawn off and added to the main chloroform portion. The combined chloroform extracts are evaporated in a distilling flask, a water bath being used. The chloroform is recovered and used again. In the same flask, the residue is steam distilled until no more oil comes off. Enough sodium hydroxide is now added to make the residue alkaline to phenolphthalein. The mixture is warmed and filtered in the cold. The filtrate is adjusted to *p*H 7.4 and made up to 50 cc. with distilled water.

Benjamin states that this hormone has little or nothing to do with the span of life but that an administration of from 15 to 30 intramuscular injections in cases of hypogonadism has seemed to bring about a certain amount of masculinization with an improvement of sexual insufficiences. In cases of premature senility, he reports, an improvement of general health has been observed, which constitutes a physical and mental reactivation. The work is still in an experimental stage, and so far only the laboratory work has been confirmed.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 8. Sec., Dr. Harry C. DeVighne, Juneau.

AMERICAN BOARD OF OTOLARYNGOLOGY: Indianapolis, Sept. 12. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha, Neb.

NEVADA: Reciprocity: Carson City, Aug. 3. Sec., Dr. Edward E. Hamer, Carson City.

NEW HAMPSHIRE: Concord, Sept. 10-11. Sec., Dr. Charles Duncan, Concord.

OKLAHOMA: Oklahoma City, Sept. 8-9. Sec., Dr. J. M. Byrum, Shawnee.

PORTO RICO: San Juan, Sept. 1. Sec., Dr. Diego Biascoechea, P. O. Box 804, San Juan.

Massachusetts March Examination

Dr. Frank M. Vaughan, secretary, Massachusetts Board of Registration in Medicine, reports the written and practical examination held at Boston, March 10-12, 1931. The examination covered 13 subjects and included 70 questions. An average of 75 per cent was required to pass. Seventy-five candidates were examined, 26 of whom passed and 49 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Boston University School of Med.	(1928) 81.5, (1930) 75, 77,		81
Harvard University Medical School	(1926) 89, (1928) 83.9, (1929) 77.6, (1931) 80.2		
Middlesex College of Medicine and Surgery	(1930) 75, (1931)		85.4
Tufts College Medical School	(1930) 75.4, 75.7, 78.7, 79.2,		81.5
Hahnemann Med. College and Hospital of Philadelphia	(1930)		75
University of Pennsylvania School of Med.	(1921) 81.8, (1929)		83.6
University of Tennessee College of Medicine	(1929)		75
Vanderbilt University School of Medicine	(1903)		83.4
University of Toronto Faculty of Medicine	(1922)		78.1
Laval University Faculty of Medicine	(1929)		77.3
Licentiate of the Royal College of Physicians and Surgeons of Ireland	(1925)		75
University of Portugal Faculty of Medicine	(1924)		75.7
Osteopaths	75.7,		77.8

College	FAILED	Year Grad.	Per Cent
College of Phys. and Surgs., Boston	(1927) 53.7, (1930)		72.8
Middlesex College of Medicine and Surgery	(1923) 66, (1926) 46.7, (1927) 54.7, 60.9, (1928) 46, (1929) 43.4, 45.2, 52.1, 69.3, (1930) 40.1, 43.7, 58.2, 59.6, 60, 64.2, 64.5		
Tufts College Medical School	(1930)		69.2
Kansas City University of Physicians and Surgeons	(1928) 58.1, 65.7, (1929) 41.7, 52.8, 64.7, (1930) 56.6, 63.4, 67.7		
Missouri College of Medicine and Science	(1927)		67.8
Hahnemann Med. College and Hospital of Philadelphia	(1926)		66
McGill University Faculty of Medicine	(1927)		71.7
University of Montreal Faculty of Med.	(1924) 64.5, (1930)		72.2
Osteopaths	7.1,* 46.4, 47.3, 48.4, 53.5, 54.6, 56.2, 57.5, 58.1, 58.7, 64.4, 64.7, 66.5, 67.7, 69.5, 70.2, 72.3		

* Examination not completed.

Dr. Vaughan also reports 9 candidates licensed by endorsement from Jan. 1 to April 6, 1931. The following colleges were represented:

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement of
Boston University School of Medicine	(1929)		N. B. M. Ex.
Harvard University Med. School	(1926, 2), (1928, 5), (1929)		N. B. M. Ex.

Rhode Island March and April Report

Dr. Lester A. Round, director, Rhode Island State Public Health Commission, reports 1 candidate licensed by endorsement after an oral examination, March 12, 1931, and 12 candidates examined and passed at a written and practical examination held at Providence, April 2-3, 1931. The following colleges were represented:

College	PASSED	Year Grad.	Per cent
Boston University School of Medicine	(1929) 83.7, (1930)		89.4*
Tufts College Medical School	(1919) 86.7, (1929)		90.2
Ohio State University College of Medicine	(1915)		90
Hahnemann Medical College and Hospital of Philadelphia	(1929) 84, 88.2, (1930) 81.8, 87,		88.2
Jefferson Medical College of Philadelphia	(1912)		86.4
University of Vermont College of Medicine	(1930)		84.2*

College	ENDORSEMENT	Year Grad.	Endorsement of
Harvard University Medical School	(1929)		N.B.M.Ex.

*Certificates being held pending completion of internship.

Book Notices

HEART DISEASE. By Paul Dudley White, M.D., Instructor in Medicine, Harvard Medical School. Cloth. Price, $12. Pp. 931, with 119 illustrations. New York: Macmillan Company, 1931.

The first thing that strikes one who takes up this book is that it is heavy, heavy in the sense of avoirdupois. This is due to the quality of the paper, which insures a clear print and illustrations that are distinct and not blurred. As one reads, one is struck by a note of individuality or personality. The author has not, either in his arrangement or in his handling of the material, followed the well worn paths of his predecessors. He has marked out new ones of his own. He has given some subjects scant treatment; others are discussed at greater length. He frankly states in his preface that in writing this textbook he is not concerned primarily with the details of anatomy, physiology, pathology, pharmacology or instrumental technic. One is not surprised therefore to find that, while these subjects are not entirely omitted, they are not stressed as are diagnosis and treatment. The book is designed for practitioners and for students who are in training to become practitioners. It is significant that it is dedicated to Dr. White's father—"a family physician." This emphasis on the need for the practitioner is well illustrated in the chapter on congestive heart failure. Here treatment is gone into at length and, it may be added, in a manner scientific, sensible and practical. Another interesting feature is the inclusion of many quotations from the original writings of authors whose names have become associated with certain signs, symptoms or diseases; e. g., Laënnec, Auenbrugger, Stokes, Flint, Corrigan and Withering. These should arouse curiosity in the student so that he will be led to consult some of these pioneer articles in their entirety. He will thus learn that many of them are not alone of historical interest but are fundamental contributions of permanent value. Dr. White aims to encourage further study by including in his volume an extensive bibliography. Nearly 200 pages and about 35,000 titles hardly justify the apologetic reference of the preface to the scantiness of the bibliography. The selection of titles is said to be restricted to the most important. Of course the list cannot be complete. A shorter one would have answered the purpose. Other sources such as the *Quarterly Cumulative Index Medicus* or the Catalogue of the Surgeon General's Library might serve to supply omissions. A fuller text here and there might better have used the space than the list of books. It seems rather odd to find that chapter XXII takes up twelve pages of text and that the bibliography for this chapter occupies the same number of pages. The author has an easy, familiar style. There is little obscurity. He has the happy faculty of speaking in the first person, expressing his own views or referring to his own experience without giving offense on the ground of egotism. The book is a distinct contribution to cardiology and does credit to American medicine.

LE GLYCOGÈNE DANS LE DÉVELOPPEMENT DES TUMEURS DES TISSUS NORMAUX ET DES ÊTRES ORGANISÉS: Physiologie normale et pathologique. Par A. Brault. Paper. Price, 80 francs. Pp. 367, with illustrations. Paris: Masson & Cie, 1930.

The author of this monograph has been a contributor to the literature on the distribution of glycogen in the body for many years. He here collects his observations and discusses them in relation to many problems of medicine. His work is based on the study of glycogen by staining reactions in sections of tissues, with the assumption that such histologic appearance of glycogen is a reliable quantitative method for the study of glycogen. On the basis of his observations he makes the categorical statement that the proportion of glycogen found in tissues, whether fetal or neoplastic, is in direct proportion with the rapidity of its development. Unfortunately, the staining reactions are not absolutely specific for glycogen, and certainly they do not constitute a reliable method for its quantitative determination. Therefore the value of this book is much less than it would be if it reported a study of glycogen by reliable chemical methods. It does, however, constitute a definite part of the literature on the subject of glycogen and particularly its microscopic distribution in tumors. There is also a discussion of the

occurrence of glycogen in animal parasites and some plant tissues, on the distribution of glycogen in embryos, in diabetic patients and in various diseases.

QUANTITATIVE PHARMACEUTICAL CHEMISTRY CONTAINING THEORY AND PRACTICE OF QUANTITATIVE ANALYSIS APPLIED TO PHARMACY. By Glenn L. Jenkins, Ph.D., Professor of Pharmaceutical Chemistry, School of Pharmacy, University of Maryland, and Andrew G. DuMez, Ph.D., Professor of Pharmacy and Dean of the School of Pharmacy, University of Maryland. Cloth. Price, $3.50. Pp. 408, with 69 illustrations. New York: McGraw-Hill Book Company, Inc., 1931.

This book is a first edition of a combined textbook and laboratory manual written to correlate the theory and practice of analytic chemistry as applied to pharmaceutic procedures. In the first part, intended for beginning students in quantitative analysis, sufficient theory is given to enable the beginner to carry out intelligently the operations of general elementary gravimetric and volumetric assays. In the second part, consisting of six chapters, careful, detailed but not burdensome explanations are given of the use of the instruments for physical methods employed in official pharmaceutic analyses. The third part contains enlightening explanations of special methods of assay used in the pharmacopeia, including a clear presentation of alkaloidal assays, the official type processes and estimations of enzyme activity. The last portion is taken up with special nonofficial methods, such as potentiometric methods of determining hydrogen ion concentration with the hydrogen electrode, titration with the quinhydrone electrode, colorimetric and nephelometric analyses, and ultimate analysis. The text includes many tables of properties, constants and official requirements for various official drugs and chemicals. Many, if not most, of the laboratory exercises are followed by questions and problems for better understanding of the procedures. Of value are the explanations of the origin of special chemical factors mentioned in the pharmacopeia. It is unfortunate that an atomic weight table of a later date than 1921 is not included in a book that in many other respects is quite modern. As an attempt to explain and make more comprehensible the bare statements of assay of the pharmacopeia, the book should be a concise source of information for students. The book would have been enhanced if the chapter on nonofficial assays had referred to some of the newer and carefully refined methods on recent drugs, such as some of those which appear in New and Nonofficial Remedies. The book constitutes a welcome and sorely needed addition to a field which has been backward in using textbooks abreast of current chemical practices.

BEOBACHTUNGEN AM GEBROCHENEN KNOCHEN. Von Dr. C. Bauer. Würzburger Abhandlungen aus dem Gesamtgebiet der Medizin, 26. Band, Heft 12. Paper. Price, 1.60 marks. Pp. 431-448, with 12 illustrations. Leipzig: Curt Kabitzsch, 1931.

The author describes an experimental study in the healing of fractures and observations with the microscope and the roentgen rays. Observations are made on fractured bones as to four points, including the functional unity of the periosteum, cortex and marrow, the development of pseudarthrosis, the origin of bone callus during the healing of fracture, and the causes of bone atrophy. It is probable that the periosteum, cortex and bone marrow all enter into the formation of a good callus and that interference with the function of any one may result in impaired callus formation. The development of a pseudarthrosis may result from a poor blood supply in parts of certain bones following a fracture. Interference with the bone marrow may impair the callus by the absence of a hormone or osteotropic substance. The interposition of periosteum and occasional soft parts may prevent union. Overriding or foreign material may act in a similar manner. Rhythmic muscular contractions may favor callus formation. Callus is usually thicker on the concave side of the long bones under the heavier more vascular flexor muscles and also on the fragment with the better blood supply. Callus may be stimulated by injecting various substances under the periosteum or slitting it with the formation of a pseudohypertrophy, which is greater with a younger, thicker periosteum. This may occur also with infection. Bone atrophy may be reflex in origin or due to disuse, pressure or a foreign body. The author has been able to produce bone atrophy in an area on a weaker companion long bone adjacent to a nonunion of the stronger bone. This may occur only on the side nearer to the nonunion, while a compensatory hypertrophy develops on the distal side. Atrophy of bone may occur in the region of practically any foreign material used for osteosynthesis, although a pseudarthrosis may be avoided by proper technic and the use of longitudinal incisions in the periosteum and with the injection of some stimulating substance, such as tar, beneath it.

ANOPHELINE MOSQUITOS IN SOUTHERN RHODESIA, 1926-1928. By H. S. Leeson, F.E.S., A.R.San.I., Department of Entomology, London School of Hygiene and Tropical Medicine. A report on investigations made during researches on blackwater fever conducted by Dr. G. R. Ross. No. 4 of the Memoir Series of the London School of Hygiene and Tropical Medicine. Paper. Price, 8/-. Pp. 55, with illustrations. London: London School of Hygiene and Tropical Medicine, 1931.

This is primarily a field study on the anopheline mosquitoes of southern Rhodesia in general, and particularly of those found in regions of endemic blackwater fever. Fourteen species of *Anopheles* were found, eight of which had previously been recorded by Evans. The newly recorded ones are: *pretoriensis, rufipes, transvaalensis, longipalpis, argenteolobatus* and *nili*. Ninety-seven per cent of all specimens belonged to the five species *funestus, gambiae, pretoriensis, rufipes* and *squamosus*. The first four of these species were the predominating *Anopheles* in Shamva, a so-called blackwater area. *Funestus* and *gambiae* were most common toward the end of the wet season (March) and were in hibernation or absent in July when the malaria incidence was lowest. They were the only species found to be infected with *Plasmodium*. In Salisbury, where there is no blackwater fever, the commonest species encountered was *squamosus* and the two next common *pretoriensis* and *rufipes*. *Funestus* and *gambiae* were rare in this district. Detailed investigations were made on the seasonal variation, breeding places, hibernation, and oviposition, of the five commonest species. On the basis of these studies, recommendations were made for the control of the more dangerous species. Appendix A consists of keys to the males and females of the *Anophelini* of southern Rhodesia, short descriptions of the adults, a key for larvae, and notes on the larvae of three of the species. Appendix B is a list of the *Culicini* collected in southern Rhodesia. There are fifteen plates of excellent photographs portraying the breeding places and hibernating places of the various species.

ARZNEI-, DIÄTETISCHE, DIAGNOSTISCHE UND SOZIALHYGIENISCHE VERORDNUNGEN FÜR DIE GYNÄKOLOGISCH-GEBURTSHILFLICHE PRAXIS. Von Dr. med. Paul Strassmann, a. o. Professor an der Universität Berlin. Fifth edition. Cloth. Price, 9 marks. Pp. 271. Leipzig: Georg Thieme, 1931.

The latest edition of this popular little book has been enlarged by the addition of information concerning diagnosis and social hygiene. The book is essentially, however, an outline of the dietetic and medical treatment of complications in obstetrics and gynecology. Obviously the author has had an extensive experience in dealing with these problems. Throughout the pages are epigrams of practical advice to general practitioners and students. At the end of the book the author appends a large number of governmental regulations with which German physicians must be familiar.

CHEMISTRY FOR NURSES. By Irene Koechig, A.M., Instructor in Biological Chemistry at Washington University School of Medicine. Cloth. Price, $2.75 net. Pp. 304, with 7 illustrations. Philadelphia: Lea & Febiger, 1930.

The problem of reviewing this textbook presents more difficult decisions than would the review of a more profound work. The difficulties hinge on whether a worth-while chemistry course can be taught in the time allotted to chemistry in an average nurse's training course. The reviewer is of the opinion that this cannot be done, so there is little excuse for the book. The author, publishers and others undoubtedly feel that extremely elementary courses are worth while; hence the volume. The volume is both a textbook and a laboratory manual. The textbook portion contains twenty-four chapters, of which thirteen are devoted to inorganic chemistry, three to organic chemistry and the remaining eight to biologic or physiologic chemistry. Of these, the chapters devoted to biologic subjects are of much more value than are the chapters devoted to organic chemistry and inorganic chemistry. The inorganic and organic chapters are much too brief to give a worth-while picture of the science of these branches of chemistry. Thus, in the inorganic chapters, the dynamic idea of reactions and certain other phenomena, such

as osmosis, saturated vapors and solutions, is hardly mentioned. In the organic chapters it takes but two paragraphs to classify hydrocarbons, and amines are mentioned only as a class of organic compounds containing an NH_2 group. This extremely elementary character of the beginning chapters carries over into the biologic chapters. Here it is somewhat more excusable because here there are more isolated facts, there is less of a scientific picture, and hence it is less serious to treat certain subjects in an elementary fashion or to leave them out altogether.

HANDBUCH DER PATHOGENEN MIKROORGANISMEN. Herausgegeben von W. Kolle, R. Kraus und P. Uhlenhuth. Lieferung 48, Band III: Dysenterie. Von Prof. Dr. O. Lentz und Prof. Dr. R. Prigge. Paper. Price, 18 marks. Pp. 1377-1584. Jena: Gustav Fischer, 1931.

The monograph on bacterial dysentery by Lentz and Prigge follows established lines. The senior author is a veteran worker in this field and has made important contributions to the bacteriology of dysentery over a period of nearly thirty years. It was to be expected that the article would show a soberly critical judgment and a wide familiarity with the voluminous literature —it contains a bibliography of over sixty pages. This expectation has been amply justified. The exposition is clear, comprehensive and sound. The four best known types of dysentery bacilli—Shiga, Flexner, Sonne and Schmitz—are clearly recognized and defined. In common with most bacteriologists the authors believe that the occurrence of numerous agglutinogenic variations is without practical significance. The wide penumbra of "paradysentery" and "pseudodysentery" bacilli is dealt with briefly and discriminatingly. The case for bacteriophage therapy is regarded as still unproved.

BACKACHE. By James Mennell, M.A., M.D., B.C., Medical Officer, Physico-Therapeutic Department, St. Thomas's Hospital. Cloth. Price, $3. Pp. 199, with 48 illustrations. Philadelphia: P. Blakiston's Son & Company, Inc., 1931.

The author's qualifications are excellent from the standpoint of training and association with some of the leading British and American orthopedic surgeons. The material is orderly and understandable. The illustrations are well chosen and executed. Many of them are in colors, red indicating the patient and blue the examiner. The author expresses his appreciation and credit to Goldthwaite and Dane. The book can be recommended without reservation to all those interested in the subject of backache.

LA POLIOMYÉLITE (PARALYSIE SPINALE INFANTILE OU MALADIE DE HEINE-MÉDIN). ÉTUDE CLINIQUE ET THÉRAPEUTIQUE. Par le Dr. Paul Duhem, électro-radiologiste de l'Hôpital des Enfants-Malades à Paris. Préface de M. le Dr. Nobécourt, professeur de clinique médicale des enfants à la Faculté de médecine de Paris. Paper. Price, 25 francs. Pp. 137, with 15 illustrations. Paris: Gauthier-Villars & Cie, 1931.

This book reviews briefly the history, etiology, clinical manifestations, pathologic anatomy, prognosis and treatment of epidemic poliomyelitis. The illustrations of the changes in the spinal cord are crude and diagrammatic. The great importance of recognizing the disease in the preparalytic stage, the value in early diagnosis of examining the arachnoid fluid and the success of treatment with convalescent serum in the earliest stages of the attack are not stressed enough. The author's main interest lies in the physical therapy of the later stages of the disease. His description of the methodical hospital organization for the treatment of poliomyelitic paralyses will be read with interest by those especially concerned. In this description, no mention is made of the value of suitable exercises in the swimming pool.

THE DIET BOOK FOR DOCTOR, PATIENT AND HOUSEWIFE WITH SPECIMEN MENUS FOR ONE WEEK AND RECIPES. By Marguerite Requa Rea. With a foreword by Sir James Purves-Stewart, K.C.M.G., C.B., M.D., Physician to Westminster Hospital. Cloth. Price, $2.75. Pp. 197. New York: Oxford University Press, 1931.

This book has been written to aid the physician in giving his patients information concerning diets; to indicate to the patient himself a suitable and adequate dietary, and to give to the housewife suggestions that will help her in preparing dishes for the capricious appetite of the invalid. Included in the book are dietaries for colitis, dysentery, constipation, diabetes, gastritis, gout, convalescence, high blood pressure, rheumatism and obesity. Some useful tables and recipes are appended. The book will fulfil quite well the purposes for which it is intended.

HANDBUCH DER GEISTESKRANKHEITEN. Herausgegeben von Oswald Bumke. Band XI: Spezieller Teil 7: Die Anatomie der Psychosen. Bearbeitet von A. v. Braunmühl, E. Grünthal, usw. Redigiert von W. Spielmeyer. Paper. Price, 184 marks. Pp. 1136, with 645 illustrations. Berlin: Julius Springer, 1930.

This volume is edited by Spielmeyer and is written by the foremost neuropathologists of Germany. It is a remarkable summarization of the present knowledge of the pathologic entities included under the headings of intoxication, infection, encephalitis, multiple sclerosis, brain trauma, syphilis, dementia paralytica, arteriosclerosis, senile dementia, Pick's disease, epilepsy, dementia praecox, idiocy and extrapyramidal disease. Most of the authors have been students of Spielmeyer, so that the whole book is written with the carefulness of scientists and yet with the broad outlook that has characterized all Spielmeyer's work. It can truthfully be said that no other work has such an accumulation of facts concerning each subject. It well behooves psychiatrists and psychoanalysts to study this volume concerning the anatomy of the psychoses before concluding that the methods of anatomy as far as the psychoses are concerned are entirely bankrupt.

DENTAL ROENTGENOLOGY. By LeRoy M. Ennis, D.D.S., Assistant Professor of Roentgenology in the Thomas W. Evans Museum and Dental Institute School of Dentistry, University of Pennsylvania. Cloth. Price, $6.50. Pp. 288, with 582 illustrations. Philadelphia: Lea & Febiger, 1931.

This new textbook on dental diagnosis presents the knowledge and technical data necessary in establishing a roentgenologic diagnosis. This subject is worthy of greater consideration than has heretofore been accorded it. The author has brought out such valuable points as the rôle of infection to generalized disease, and the possibility of carcinomatous development due not only to chronic mechanical irritation but also to continued focal bacterial invasion. Many pathologic illustrations are shown accompanied by brief but appropriate legends. The illustrations are good. This work merits particular notice among the members of the dental profession in particular and those of the medical profession in general.

PRATIQUE MÉDICO-CHIRURGICALE. Publiée sous la direction de A. Couvelaire, A. Lemierre et Ch. Lenormant, professeurs à la Faculté de médecine de Paris. Tome I: Abasie-Bile. Third edition. Boards. Price, 300 francs, per set of 2 volumes. Pp. 1205, with illustrations. Paris: Masson & Cie, 1931.

PRATIQUE MÉDICO-CHIRURGICALE. Publiée sous la direction de A. Couvelaire, A. Lemierre et Ch. Lenormant, professeurs à la Faculté de médecine de Paris. Tome II: Biopsie-Démence. Third edition. Boards. Price, 300 francs, per set of 2 volumes. Pp. 1045, with illustrations. Paris: Masson & Cie, 1931.

The first four volumes of this encyclopedia start with "abasia" and end with "intestin"—this gives an idea of the scope of the work. It is, of course, impossible to review in detail an encyclopedia. Articles picked out at random, however, seem to indicate a high standard. They are succinct and give a good idea of the subject discussed. There are plenty of illustrations, usually well chosen, and the type is excellent. These four volumes indicate that this encyclopedia in its third edition will be a valuable reference book.

RECENT ADVANCES IN CARDIOLOGY. By C. F. Terence East, M.A., M.D., F.R.C.P., Junior Physician, King's College Hospital, and C. W. Curtis Bain, M.C., M.B., M.R.C.P., Physician, Harrogate Infirmary. Second edition. Cloth. Price, $3.50. Pp. 353, with 72 illustrations. Philadelphia: P. Blakiston's Son & Company, Inc., 1931.

The first edition of this work was favorably reviewed by THE JOURNAL, as by many other publications. From reading the title it was hoped that the present volume would be found to be a continuation of the first, dealing especially with the advances of the last two years, but it is merely a new edition of the old work. There have been some additions and some rearrangement of the old material, yet it is essentially the same book as before. There are only a few references to literature since 1929. The book is, as was said in the earlier review, more than a mere collection of abstracts. There is intelligent and thorough discussion of clinical and pathologic facts and important modern theories concerning heart disease. Not the least important feature is the personal opinion of the authors, frankly expressed. The owner of the first edition will not feel like buying this volume. In spite of minor changes it is nearly identical with the first edition, little more than a reprint.

Miscellany

REPORT OF EXPERTS OF LEAGUE OF NATIONS CONCERNING DIACETYLMORPHINE (HEROIN)

The Technical Committee of the League of Nations at a meeting in Geneva, Switzerland, June 8, decided to request the experts to express a decision on the following questions pertaining to diacetylmorphine (heroin):

1. What are the properties of diacetylmorphine which make it particularly suitable to serve as a habit-forming narcotic drug and to form the subject of illicit traffic?

2. What are the therapeutic advantages of diacetylmorphine as compared with those of morphine and other morphine derivatives?

3. Are the therapeutic properties of diacetylmorphine such that it cannot be replaced by other medicaments without ill effects on the patient?

4. Are not the risks of diacetylmorphine for humanity incomparably greater than the advantages resulting from its therapeutic use?

5. Can the experts state what is the medical practice in each of the countries possessing a highly developed medical system, as regards the use of diacetylmorphine, and give their opinion as to the value of its use?

6. Is diacetylmorphine (heroin) an indispensable drug?

REPORT OF THE COMMITTEE

Morphine and its derivatives, whether habit forming or not, possess several characteristic properties in common. The different alkaloids, however, exhibit these properties in very varying degrees, to which it is necessary to refer before replying to the questions. These properties may be reduced to the following three principal actions:

A. *Analgesic and Euphoric Properties.*—These belong only to the habit-forming morphine alkaloids; they render these alkaloids pain relieving and in certain people they alter psychic reflexes, so as to produce a feeling of happiness and well being. The continual use of such alkaloids leads to addiction, and the addict acquires an irresistible craving and an ever-increasing tolerance.

B. *Depressing Properties on the Respiratory Center.*—These are common to all the habit-forming morphine alkaloids, though different alkaloids show the effect in different degrees. This effect is manifested principally in the relief of coughing and all painful disorders of the respiratory system.

C. *Depressing Properties on the Alimentary Canal.*—These are shown best with morphine and render it valuable in the treatment of certain forms of colic.

The differences between the various morphine alkaloids with regard to these properties is chiefly quantitative. These differences are not necessarily in the same direction; any one of these properties may be exaggerated while another is at the same time hardly obvious. In codeine (methyl morphine), for example, the analgesic and euphoric properties (A) of morphine are very weak, while the B property is relatively little changed, and the C effect is a little weaker. In heroin the properties A and B are stronger while the intestinal action C hardly exists.

The knowledge of these properties to the physician is of the utmost importance, not only in the treatment of drug addiction but, what is much more important, the prevention of this condition. It is also an essential part of the physician's armamentum to be able to prescribe these drugs with the least risk, while providing for all the patient's requirements. Thus the choice of a drug such as codeine for the relief of coughing avoids the analgesic and euphoric action of morphine, which in this case is useless or even harmful, as it involves unnecessary risks.

1. In reply to the first question, heroin is more powerful than morphine and its dose is smaller. Unlike morphine, it may be readily taken as snuff. In the East it is occasionally smoked. Also in view of the smallness of its dose, trafficking is easier. Heroin euphoria is much more pronounced than that of morphine, and constipation does not occur in the addict—that is, the A and B effects are stronger and the C effect negligible.

2. Heroin is about two times stronger than morphine in its effect in the relief of pain (A). It is more effective than either morphine or codeine in the relief of coughing (B). It does not cause constipation.

3. We believe that the properties of diacetylmorphine, which render it popular with some physicians, can in most if not all cases be efficiently replaced by other morphine drugs. For the relief of coughing, codeine is a valuable substitute, though not so strong as heroin: dicodide has as powerful an effect on the respiratory center as morphine, though less than that of heroin. and its addiction properties are less pronounced than those of the latter drugs. For the relief of pain in patients in whom it is undesirable to act on the bowels, heroin is better than morphine but dilaudide offers the same advantages. This alkaloid has much the same type of effect on the respiratory center as heroin but is weaker; it is about the same as heroin in its pain-relieving properties, and, like heroin, has little effect on the alimentary canal. Furthermore, the euphoric effects of dilaudide are weaker than those of both morphine and heroin as gaged by withdrawal symptoms.[1]

4. We feel that the dangerous nature of heroin from the social point of view overshadows its therapeutic importance.

The social dangers of heroin arise, on the one hand, from the great reputation this substance possesses among drug addicts and from the enormous illicit traffic which has arisen; on the other hand, they come from its characteristic habit-forming properties, which, from the medical point of view, are much worse than those of other habit-forming narcotic drugs.

The effect of heroin is in the main to produce a change in personality, as shown by an utter disregard for the conventions and the morals of civilization. The disease progresses more rapidly than with any other habit-forming narcotic drug; all the higher faculties of mind, such as judgment, self-control and attention, are weakened, and such people rapidly become mental and moral degenerates.

The heroin habit is the most difficult of all to cure; sudden withdrawal of the alkaloid, which, according to most authorities, is the best treatment for the morphine habit, may lead to cramps and convulsions and even to death from respiratory failure. But besides the difficulty of withdrawal, the after-convalescent treatment, both psychic and physical, is longer and more difficult with heroin and relapse is the rule.

5. The opinion of the medical profession on the therapeutic value of heroin varies not only in different countries but even in the same country.

The medical consumption rates per head of the population for this substance, as shown by the league statistics, differ to such an extent that it suggests that its use is perhaps not unconnected with fashion. For example, there is a difference of 400 per cent between the consumption rates for Great Britain and Germany, 4,000 per cent between those of Switzerland and France, and 4,500 per cent between Switzerland and Japan. Our attention has been drawn to the use made of heroin in the following sickness insurance societies (*krankenkassen*) of two large cities in central Europe:

The large society Allgemeine Ortskrankenkasse der Stadt Berlin, with a membership of about 500,000, shows for 1927 a consumption of 0, and for 1928 a consumption of 3.24 Gm. If this figure should be accepted as a basis of estimation, then for a group of 65 million inhabitants, which represents the whole German population, the consumption should totaly only 425 Gm., whereas the actual consumption of this country was 36 Kg. during the same year.

The Krankenversicherunganstalt der Bundesangestellten of Vienna, which has also a membership of about half a million, shows for the same period a total consumption of 144 Gm. Estimated on this basis, the total consumption of Austria would amount to 1,930 Gm., whereas it was actually over 5 Kg. In considering this figure, it should be borne in mind that these two groups of insured people belong to large urban centers whose narcotic consumption is usually higher than that of the

1. With regard to the recently introduced dilaudide, MM. Dixon and Tiffeneau desire to place on record that they have had no personal experience.

rural populations, and that the members of these sickness insurance societies always represent that portion of the population which is best provided for as regards medical assistance.

We have evidence that a large majority of the eminent pharmacologists and physicians throughout Europe and America are definitely opposed to the employment of heroin in medical practice.

6. In view of the evidence which we possess and especially the fact that all the beneficial actions of heroin can in our opinion be obtained by one or other of the drugs mentioned, we believe that heroin can be entirely dispensed with. If the physicians in countries where heroin is used are afforded the opportunity of examining and testing clinically the morphinic derivatives to which we have drawn attention, we feel little doubt that they may be induced to dispense with the use of heroin entirely.

Medicolegal

Patient's Right of Privacy

(Bazemore v. Savannah Hospital (Ga.), 155 S. E. 194)

A child was born to the petitioners, with its heart on the outside of its body. The family physician carried it to the Savannah Hospital for an operation. The operation was unsuccessful, and the child died. The Savannah Hospital permitted one Foltz to photograph the child in a nude condition and gave to a newspaper, the Savannah *Press*, the facts in the case, without the permission or knowledge of the parents of the dead child. Foltz commercialized the pictures he had taken, selling them to various persons for his own profit. The Savannah *Press* published a picture of the child, showing its physical condition, and commented on the facts of the case. The parents of the child thereupon brought suit against the Savannah Hospital and others. The defendants demurred on the grounds, among others, that the petition set out no cause of action and that the damages claimed were too remote to be a basis for the recovery of damages and were not the natural and proximate result of the defendants' acts. The demurrer was sustained. Thereupon the parents of the dead child appealed to the Supreme Court of Georgia, where the judgment of the court below was reversed.

In their petition to the trial court, the parents of the dead child asserted their right to have their child properly treated in the Savannah Hospital and the extrinsic facts kept secret and undisclosed and to have their child and its genital organs kept properly covered and unexposed. In the belief that the hospital would properly perform its duties and reposing trust in it, the parents, the petition averred, permitted their child to be taken to the hospital, where it was the duty of the hospital properly to protect it from invasion by any unauthorized person, so as to guard the monstrous and nude condition of the child from exposure to any other person or persons and particularly from exposure to the public. Alleging that the hospital, in disregard of the rights of the parents, exposed the case to the public through the photographer, Foltz, and the newspaper, the Savannah *Press*, the petitioners prayed that the respondents be restrained from further exploitation of pictures of the dead child and be required to pay damages. The commercialization of such pictures by the photographer, they claimed, caused them chagrin, mortification, humiliation, insult and injury, and was a trespass on their rights of privacy. The publication of the picture by the Savannah *Press*, with comments on it, was a breach of the parents' rights of privacy and was caused by a breach of confidence and trust reposed in the Savannah Hospital. All of these acts caused the parents pain and distress, disgraced them, attacked their good name, humiliated them and made them sick, and obliged them to employ a physician for their treatment.

This suit, said the Supreme Court, was not based on injury to the deceased child. The wrongs complained of were done after the child's death. If a right of action ever existed or now exists, it began after the death of the child and is a right of action on the part of the parents. The petition by the parents for general and special damages and for an injunction, because of the alleged wrongful acts, set forth a cause of action. Quoting from *Pavesich* v. *New England Life Ins. Co.*, 122 Ga. 190, 50 S. E. 68, the Supreme Court said: "The publication of a picture of a person, without his consent, as a part of an advertisement, for the purpose of exploiting the publisher's business, is a violation of the right of privacy of the person whose picture is reproduced, and entitles him to recover, without proof of special damages."

The defendants insisted that the court, in the Pavesich case just cited, adopted the view of the court of common pleas of New York city and county, in *Murray* v. *Lithographic Co.*, 8 Misc. Rep. 36, 28 N. Y. S. 271, that a person cannot sue to enjoin the publication of a portrait of his infant child or for damages caused thereby. The Supreme Court of Georgia, however, said the court, could not have made a binding ruling to that effect, because no such question was involved in the Pavesich case and the remark of a justice was clearly obiter dictum. Moreover, in the Murray case, the New York case referred to, the parent sought to recover damages for the unauthorized publication of the portrait of his living child, and the court held that the right of action was in the living child itself. In the present case, the child was dead when the unauthorized acts complained of were committed, and the right of action could not be in the child and must be in the parents. The New York case, moreover, was not decided by the court of last resort in that state. The court below erred in dismissing this case and the judgment was therefore reversed, Hill, J., dissenting.

Workmen's Compensation Acts: Cataract Attributed to Trauma.—Sept. 1, 1926, the employee's right eye was hit and cut or abraded by a piece of rock flying from a hammer with which he was breaking ore. By the following May, a cataract was well developed. By June, it had matured, causing total blindness. Two physicians, one of whom treated and observed the employee for six weeks following the accident, and the other of whom examined him in October, 1927, testified that the injury did not directly nor by infection extend to the lens and hence could not have caused the cataract. Two other physicians, testifying for the employee, were of the opinion that the injury might have caused it. On this opinion evidence alone, said the Supreme Court of New Mexico, there would be warrant for the employer's contention that the cause of the cataract was conjectural. There were, however, other facts that the jury might consider. Traumatic cataract is of frequent occurrence. No cause was suggested for this cataract other than the injury. The time sequence was favorable to the employee's theory. He testified that he had suffered no other injury, had never previously had trouble with the eye, and that, so far as he knew, it was normal prior to the injury. If the jury believed the employee's testimony, it could not reasonably reach any different conclusion than that the cataract was the result of the trauma. It was not compelled to reject this testimony for that of the physicians who testified that there was no penetration nor infection of the lens and hence, theoretically, no causal relation between the trauma and the cataract.—*Pino v. Ozark Smelting and Mining Co. (N. M.), 290 P. 409.*

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, French Lick, Indiana, September 14-19. Dr. William P. Wherry, Medical Arts Building, Omaha, Executive Secretary.

American Public Health Association, Montreal, September 14-17. Dr. Kendall Emerson, 450 Seventh Avenue, New York, Acting Executive Secretary.

Colorado State Medical Society, Colorado Springs, September 15-17. Mr. Harvey T. Sethman, Metropolitan Building, Denver, Executive Secretary.

Kentucky State Medical Association, Lexington, September 7-10. Dr. Arthur T. McCormack, 532 West Main Street, Louisville, Secretary.

National Medical Association, Atlanta, Ga., August 17-21. Dr. Walter G. Alexander, 136 West Kinney Street, Newark, N. J., Secretary.

Pacific Northwest Orthopedic Association, Vancouver, British Columbia, September 5. Dr. Charles McClure, 322 Alder Street, Portland, Ore., Secretary.

Utah State Medical Association, Salt Lake City, September 9-11. Dr. M. M. Critchlow, Boston Building, Salt Lake City, Secretary.

Washington State Medical Association, Aberdeen, August 3-5. Dr. Curtis H. Thomson, 1305 Fourth Avenue, Seattle, Secretary.

Wisconsin, State Medical Society of, Madison, September 9-11. Mr. J. G. Crownhart, 119 East Washington Avenue, Madison, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

48: 3-260 (May 20) 1931

Postnuclear Granule in Anasa Tristis, with Some Remarks on Hemipteran Spermatogenesis. J. B. Gatenby, Dublin.—p. 7.

Closure of Foramen Ovale. B. M. Patten, Vienna.—p. 19.

Observations on Bone Weights. N. W. Ingalls, Cleveland.—p. 45.

*Irradiation of Ovaries of Guinea-Pigs and Its Effect on Estrous Cycle. Ida T. Genther, St. Louis.—p. 99.

*Cells of Suprarenal Cortex in Guinea-Pig: Their Reaction to Injury and Their Replacement. N. Hoerr, Chicago.—p. 139.

Bimanual Variation in Palmar Dermatoglyphics. H. Cummins, Stella Leche and Katherine McClure, New Orleans.—p. 199.

Studies on Inheritance of Structural Anomalies in Rat. Helen D. King, Philadelphia.—p. 231.

Irradiation of Ovaries of Guinea-Pigs.—On the basis of experiments on guinea-pigs, Genther distinguishes two important types of alteration in the function of the genitalia following exposure of the ovaries to roentgen rays. Long exposures with filtered roentgen rays and short exposures with unfiltered roentgen rays, the latter in somewhat less than half the cases, produced, in the ovaries of guinea-pigs, degeneration of large and small follicles together with the egg cells contained in their cavities and subsequent hypertrophy of the theca interna cells of the follicles, so that the greater portion of the ovary became permeated with interstitial gland. Primordial follicles remained in such ovaries, but they were scarce. New follicles continued to mature partially or completely, however, but without any regularity; atresia of these follicles occurred usually without ovulation but leading to the formation of abnormal interstitial gland tissue; in other cases, structures simulating corpora lutea were produced. Estrous cycles continued in these guinea-pigs but were irregular in length, and often a prolonged estrous period was noted. Whenever estrus occurred, at least one large follicle was found in the ovary. Under these conditions, the genital tract and the mammary gland showed typical estrous changes. In case the estrus was prolonged, the activity of these organs seemed to be abnormally intense. In about 45 per cent of the cases, short exposures with unfiltered roentgen rays led to atresia of the connective tissue of all the follicles except some of the primordial ones; later, a fibrosis of the ovary occurred, and the organ as a whole shrank. In these ovaries the uninjured primordial follicles developed subsequently to small follicles, but these also degenerated as soon as they were formed, and thus medium or large follicles were not found in such ovaries. As a result of these changes, sexual cycles were absent and the genital tract was in a continuous resting condition, becoming atrophied in about one month after irritation. In all cases the follicular elements were first affected by the roentgen rays. Either the ovum underwent degeneration earlier than the follicular granulosa, or both granulosa and ovum underwent degeneration about simultaneously. In two instances, cycles appeared again after long periods of inactivity. The ovary functioned normally, but the effects of the treatment were still apparent. On the whole, the corpora lutea were highly resistant to the action of the roentgen rays; they seemed unaffected, and they retrogressed at their usual rate. However, in many cases, no new corpora lutea formed following exposure to a sufficiently strong dose of roentgen rays, and in the absence of a corpus luteum the cycles therefore consisted of the follicular phase only; there is reason for believing that it is the absence of corpus luteum action which makes possible the marked prolongation of estrus in such animals. The germinal epithelium and the tunica albuginea remained unchanged as a result of the roentgen rays. On the basis of these experiments, it is concluded that the generally accepted view as to the importance of the follicular hormone in initiating estrus is correct. The necessary hormone is elaborated by the maturing follicles, regardless of the character of the rest of the ovarian tissue. The results of these experiments are furthermore considered as in harmony with the conception of the function of the corpus luteum as a regulator of the sexual cycle; it prevents ovulation and tends to counteract the effect of the follicular hormone; in its absence the cycle depends on the growth and function of the follicles only.

Cells of Suprarenal Cortex in Guinea-Pig.—According to Hoerr the cells of the suprarenal cortex have a short life history. They are continually dying off in the zona reticularis and being replaced by cells produced by cell division in the outer levels of the cortex, mainly at the border of the glomerulosa and fasciculate zones. Cells normally degenerating through senescence in the reticularis may do so in one of two ways: first, by cytolysis, chondriolysis, karyolysis and loss of lipoid and pigment; and, secondly, by shrinking and homogenization of the cytoplasm, chondriomegaly, pyknosis and retention or increase of lipoid and pigment content. The early stages of these processes are the so-called light and dark cells; they are senescent cells destined soon to degenerate. The cells of the zona reticularis are so susceptible to disease because: 1. They are senescent or dying cells. 2. They are of a highly differentiated type. 3. They are surrounded on several sides by capillaries and are poorly supported by connective tissue. 4. Receiving a large blood supply (6 to 7 cc. of blood per gram per minute), they also receive a large quantity of the noxious agent. If the suprarenal cortex has a detoxicating function, convincing evidence thereof has not yet appeared. The rate of cell destruction and proliferation can be greatly accelerated by the injection of toxins, bacterial suspensions, metallic poisons, and so on. If the dosage is heavy, severe lesions may result: hemorrhages, focal degenerations, vacuolation of cells, change in lipoid content and infiltration of leukocytes and macrophages. If the lesions are not so severe as to cause a great injury to the supportive tissue, and thereby a reaction from the fibrogenic elements (scar formation), they are rapidly repaired by a removal of the necrotic débris and replacement by sound cells from the outer zones of the cortex. Repair is usually effected within a week from minor injuries, and nearly always within a month, even from severe injury to the cortex. The removal of the dead cells in the zona reticularis is brought about partly by infiltrated polymorphonuclear leukocytes, in acute severe lesions, but mainly by macrophages, plasma cells, monocytes and lymphocytes. The reticulum cells may be transformed into macrophages, and the endothelial cells may become phagocytic. In lesser degree, this process occurs physiologically, since cells are constantly dying in the zona reticularis.

American J. Roentgenol. & Rad. Therapy, New York

25: 577-714 (May) 1931

*Roentgenologic Demonstration of Polypoid Lesions and Polyposis of Large Intestine. H. M. Weber, Rochester, Minn.—p. 577.

*Further Studies in Application of Intravenous Cholecystography and Liver Function Determination as Employed in Office Practice. C. A. Waters and W. B. Firor, Baltimore.—p. 590.

*Necessity for Accurate Technic in Oral Cholecystography: Errors Attributable to Technical Lapses. B. R. Kirklin, Rochester, Minn.—p. 595.

Five Years' Experience with Oral Cholecystography. W. H. Stewart and H. E. Ellick, New York.—p. 602.

*Tuberculous Atelectatic Cirrhosis of Lung: Its Roentgenologic Significance. K. Kornblum and R. T. Ellison, Philadelphia.—p. 620.

Fractures of Anterior Superior Portion of Os Calcis Due to Indirect Violence. H. W. Dachtler, Toledo, Ohio.—p. 629.

*Metastatic Testicular Carcinoma of Rib. W. Neill, Jr., Baltimore.—p. 632.

*Effect of Roentgen Rays on Heart: Toleration Dose for Myocardium of Rats. A. S. Warthin, Ann Arbor, Mich., and E. A. Poble, Madison, Wis.—p. 635.

*Treatment of Carcinoma of Rectum by Radium. H. H. Bowing, R. E. Fricke and F. R. Harper, Rochester, Minn.—p. 644.

Study of 210 Cases of Carcinoma of Rectum and Anal Canal, Treated Between 1914 and 1925, Inclusive. B. F. Schreiner and J. P. O'Brien, Buffalo.—p. 654.

Radiation Output of Roentgen Tube as Determined by Type of Apparatus. J. Zakovsky, Vienna, Austria.—p. 659.

Roentgenologic Demonstration of Polypoid Lesions.—For the roentgenologic demonstration of polypi and polyposis of the colon, Weber uses a modification of Fischer's combined method. The diagnostic results have been gratifying. In the

application of this technic it is essential that all residues and fecal remnants be entirely removed and that the walls of the colon be collapsed. On the day before the examination the evening meal is withheld, and 2 ounces (60 cc.) of castor oil is administered. On the following morning the distal parts of the colon and rectum are cleansed by one or two plain, low enemas. Saline purgatives and cathartics that depend on the property of activating the bowel by irritation are to be avoided. The patient then presents himself at the roentgenologic laboratory, and the opaque enema is administered under roentgenoscopic control. The opaque material in the enema should be minutely divided and uniformly suspended, and the suspension should be well sustained. Several commercial preparations of the opaque salt are available which are satisfactory, or a suspending agent, such as acacia, may be added to the enema when it is prepared in the laboratory. The consistence of the enema should be approximately that of heavy cream. Roentgenoscopic and roentgenographic study should be completed with dispatch because the opaque salt sometimes goes out of suspension rapidly, perhaps as a result of the dehydrating function of the colon. It is not always easy to obtain ideal distribution and concentration of opaque material on the mucosal surface of the colon. No more than a uniform thin coat is desirable. The patient is told to evacuate the enema as completely as possible, and it will usually be found that a sufficient amount of the material remains in the lumen after evacuation. If large collections of the material are still seen after the attempt at evacuation, the rectum can be insufflated with a volume of air sufficient to induce a desire for defecation, whereupon the patient usually will return with as near the ideal distribution and concentration of opaque material as is possible in his case. A hand blower is used for insufflation. The colon is inflated under roentgenoscopic control, and care is exercised not to overdistend any of the segments. The procedure is facilitated by frequent rotation of the patient on the roentgenoscopic table and by manipulation of the bowel through the abdominal wall. Insufflation carried out in this way has not been in any way more distressing to the patient than administration of the oqaque enema. The fluoroscopic image of the air-filled colon lacks sufficient detail to be of diagnostic value. The enema tip is removed from the rectum as soon as the cecum has been moderately distended, and stereoroentgenograms are made with the patient lying on the abdomen. The grid diaphragm is of distinct advantage in educing the fine detail requisite for precise demonstration of the character of the lesions. Except in those cases in which patients have been referred especially for determination of the presence of polypoid lesions, the author's practice has been to use the opaque enema first and to apply the combined method whenever the data yielded by the opaque enema were insufficiently precise to make it possible to come to a decision about the nature of the disease present. He has applied the combined method, also, in the presence of disease of the colon other than polypoid lesions and polyposis. Because of its novelty, however, he hesitates to render an estimate of the value of the combined method in the differential diagnosis of deforming diseases of the colon. It seems probable that with accumulation of experience and with refinement in technic, with which a more widespread application inevitably will be accompanied, the combined method will make valuable contributions toward increased accuracy in the roentgenologic differential diagnosis of all types of diseases of the colon.

Application of Intravenous Cholecystography.—According to Waters and Firor, there are three complications that attend the employment of intravenous cholecystography. The commonest and least serious is urticaria, which can be promptly controlled by 0.5 cc. of solution of epinephrine hydrochloride given hypodermically; second, endophlebitis obliterans; third, "sore arm." Unquestionably, the most annoying complication is endophlebitis at the site of injection and, while the authors had experienced only one instance in their first ninety-six cases, they have encountered it more frequently during the past few months. They have endeavored to ascertain the exact cause of this complication, but up to the present time have not been able to reach a final conclusion. Up to the present time, only two conditions contraindicate the employment of intravenous cholecystography; namely, cardiac decompensation and threatened uremia.

Accurate Technic in Oral Cholecystography.—Kirklin states that, of the two methods of cholecystography, the oral method of administering the opaque dye is far more extensively employed. Yet it is widely assumed, and many adherents of this procedure have been disposed to grant without argument, that it is considerably less accurate than the intravenous method. The author is convinced, however, that this assumption has been derived largely from the experimental period of cholecystography when methods in which the dye was given by mouth were diverse and highly imperfect; that statistical comparison of the two methods often has been made under conditions that were not validly comparable and that, if a rational and punctilious technic is employed, the diagnostic results following oral administration of the dye are fully as reliable as those obtained when it is given intravenously. Experience has furnished abundant proof that in giving the drug by mouth it should be administered in sufficient quantity and in freely absorbable form. It should be so given that it will not tend to excite nausea, vomiting or annoying catharsis. It should be taken into the stomach immediately after the ingestion of a full meal containing a minimal quantity of fats. Fats should be withheld subsequently until the gallbladder has had opportunity to fill with dye-laden bile and to concentrate it. As a routine, roentgenograms should be made at not less than three properly spaced intervals. A fatty meal between the final sets of roentgenograms is essential. Other food or drink that might empty the gallbladder prematurely should not be taken by the patient. Purgatives and other medicaments that may affect the motility or absorbability of the bowel or the function of the gallbladder are to be interdicted during the period of examination.

Tuberculous Atelectatic Cirrhosis of Lung.—Kornblum and Ellison call attention to atelectatic cirrhosis of the lung as a lesion that may develop in the course of healing in tuberculosis. Two cases are reported in which this lesion was the only roentgenologic manifestation of the disease. Two additional cases are presented to show the roentgenologic changes occurring in the development of this lesion. The authors discuss the underlying pathology and describe the roentgenologic appearance and the salient features in the recognition of tuberculous atelectatic cirrhosis. Emphasis is laid on the necessity for the roentgenologic consideration of tuberculosis in all obscure lesions of the chest.

Metastatic Testicular Carcinoma of Rib.—Neill reports a case of apparent cure by radium of a metastatic testicular carcinoma of the fifth right rib. The patient received, in all, four treatments with radium, the first at the end of February and beginning of March, 1922, the second in May, 1922, the third in September, 1922, and the fourth and final in January, 1923. Each treatment was carried to a full erythema, with variation in the distance. The new growth occurred in an atrophied testis. One area only was involved by the metastasis. The prompt response to irradiation is in accord with the high grade malignancies of this type. There was reossification of the rib after extensive radium treatment.

Effect of Roentgen Rays on Heart.—Warthin and Pohle exposed the precordium of 104 rats to roentgen rays of two different wavelengths; the effective wavelengths (Duane) amounted to 0.19 angstrom (140 kilovolts, 0.25 mm. of copper plus 1 mm. of aluminum) and 0.34 angstrom (100 kilovolts, 2 mm. of aluminum) on a valve tube apparatus with condenser. The dose varied from 500 r, 600 r, 700 r, 800 r, to 1,000 r as measured with the ionization chamber in air. In view of the small fields used, this dose may be assumed to approximate that on the surface. Twenty-six rats served as controls. The irradiated animals were killed one week or one month following the exposure. No clinical symptoms could be observed that might indicate a heart injury. The only gross pathologic change consisted of a dilatation of the right ventricle. Microscopically, there was Zenker necrosis in varying degrees, pyknosis of nuclei and increase in stroma nuclei with small foci of lymphocytes. If one considers only the presence of definite Zenker necrosis and an increase in the stroma nuclei as evidence of roentgen injury, the toleration dose for the myocardium of adult rats lies apparently at 500 r effective in the heart.

Treatment of Carcinoma of Rectum.—Bowing and his associates are of the opinion that cases of carcinoma of the rectum are surgical problems and that radium and roentgen

rays are valuable surgical adjuncts. The cases may be classified into operable and inoperable groups. Definite rules cannot be made regarding the method of classification; however, all cases of extensive local lesions and wide fixation, with or without a serious break in the patient's general health, are placed in the inoperable group. In a limited number of cases in which the lesion is operable, an exploratory operation may reveal local or distant metastasis. In a selected number of operable lesions a combination of operation, radium and roentgen rays should produce more lasting results than operation alone. In the event of preoperative preparation of the patient with adequate irradiation, the time interval between treatment and surgical removal should be at least eight weeks or sufficiently long to permit satisfactory healing to occur in the treatment field. The inoperable group furnished many problems. It is possible in some cases to treat adequately without colostomy. In this event, the colostomy should be elective rather than emergent. Patients with extensive lesions should receive at least one course of adequate treatment; however, if the general health is sensibly undermined, only cautious treatment is indicated. There is a possibility that in certain cases the condition may be made operable by suitable treatment and a sufficient interval of time. Palliation is all that should be expected in the presence of lesions in which malignancy is graded 4. Treatment by radium rays, supplemented with high voltage roentgen rays, is the treatment of choice. Colostomy should be performed at an elective time. For the present, one should maintain a flexible method of treatment and thus individualize it as much as possible. Through cooperation and coordination of effort the present results should be greatly improved.

American Journal of Syphilis, St. Louis

15: 145-288 (April) 1931

*Apparent Sequence of Spirochetes and Granular Forms in Syphilitic Buboes. A. S. Warthin and R. E. Olsen, Ann Arbor, Mich.—p. 145.
Adequate Treatment of Syphilis and New Method for Evaluating Therapy. E. T. Burke, Salford, Lancastershire, England.—p. 155.
*Treatment of Neurosyphilis: Observations on 393 Patients Over Period of Five Years. C. R. Rayburn and T. M. Boyd, Norman, Okla.—p. 168.
*Improved Method of Protein Fever Treatment in Neurosyphilis. M. O. Nelson, Tulsa, Okla.—p. 185.
*Basic Bismuth Camphocarboxylate in Treatment of Syphilis. J. A. Kolmer, Philadelphia.—p. 190.
Recent Developments in Bismuth Therapy. P. A. Kober, Chicago.—p. 199.
Experiences with Colloidal Mercury Sulphide (Hille) in Treatment of Syphilis. M. J. Freeman, G. G. Taylor and C. White, Chicago.—p. 207.
Syphiloderma Pustulosum: Case Report with Histologic Studies and Tissue Transplants of Cutaneous Lesions. F. Thurmon and D. Blain, Boston.—p. 213.
Three Unusual Cases of Late Syphilis. A. F. Kraetzer, New York.—p. 220.
Theoretical Considerations in Connection with Cold Incubation Complement Fixation Test. B. S. Levine, Chicago.—p. 225.
Microscopic Slide Precipitation and Kahn Tests in Public Health Laboratory. E. Taylor, H. J. Knapp and Marcella Oglesby, Cleveland.—p. 231.
Notes on Kline Precipitation Test for Syphilis. H. V. Stewart, Little Rock, Ark.—p. 234.
Mueller's Conglobation Reaction II: Simplified Technic. F. R. Schmidt, Chicago.—p. 240.
Bile as Antigen in Serum Diagnosis of Syphilis. N. Colosi, New York.—p. 244.

Spirochetes and Granular Forms in Syphilitic Buboes.—In histologically typical lesions of syphilis, Warthin and Olsen demonstrated by specific staining methods certain intracellular forms which, because of their obvious connection to typical spirochetes, may be regarded as representing phases of the syphilitic organism. Of these forms they describe the polymorphous or ring form, which may be connected to the typical spirochete or more often to the fine spiral form; the lymphocytic granular form with intermediate spirochetal stages, and the fine threads and granules found in the giant cells. The intracellular polymorphous form and attached small spirochetes are widespread in their distribution and apparently are found in all syphilitic lesions, being least common in areas undergoing resolution. They may occur independently of the typical large spirochete form. Their staining reaction is such that they are not usually demonstrable by the standard spirochete staining methods. The lymphocyte cell granular type is commonly found in lymphoid tissue during the early stage of syphilis and is usually absent in the later stages. The giant cell reaction forms are limited to the areas of resolution and occur only occasionally in the giant cells found in the late stages or in gummas. From the morphologic evidence it would appear that one is dealing here with intracellular stages of *Spirochaeta pallida*. Their relations to the typical form appear so obvious and certain, and the assumption that these intracellular forms are associated with *Spirochaeta pallida* clears up so many of the problems attending the demonstration of the typical spirochete in syphilitic lesions, that the temptation is great to draw such conclusions. But one must take a conservative position in regard to this question, for however obvious the morphologic evidence may appear, still it can never be absolutely conclusive as to the positive nature of the relationship of apparently closely related forms. The ultimate settlement of this question must rest on experimental evidence.

Treatment of Neurosyphilis.—According to Rayburn and Boyd the general conception of neurosyphilis, as to both treatment and prognosis, has changed considerably during the past ten years. In their group of 393 excited or terminal neurosyphilitic patients, over 76 per cent have shown improvement. In any patient with indications of an old syphilitic infection, caution should be exercised in starting the treatment, especially if the use of the arsphenamines is contemplated. Never should the initial treatment in definite neurosyphilis contain the arsphenamines. Every patient should have individualized treatment to suit him and to suit his individual type of condition. This appears to be the keynote in obtaining the best results. In developing individualized treatment, many factors are to be considered. Tryparsamide is a valuable chemical preparation in the treatment of neurosyphilis, especially in the early treatments. It is often necessary to change from the use of chemotherapeutic agents to some form of fever therapy. In a single individual, it may be advantageous to change from one form of chemotherapy to another, or it may be advantageous to change from malarial fever to protein fever. A conservative early plan of treatment is valuable. General hygiene measures, with freedom from responsibility, quiet and so on, are essential in treating all phases of neurosyphilis.

Protein Fever Treatment in Neurosyphilis.—In the past eighteen months, Nelson has made use of a method of giving combined typhoid vaccine by which fever as high as that produced by malaria appears to be obtainable. The technic is simple and consists of giving two daily intravenous injections of the vaccine, properly spaced as to time of injection. The first dose is given at any selected time and is of a size calculated to cause slight fever; the second is given during the height of fever produced by the first (usually at the end of the second or third hour). The second dose seems to have the effect of "exploding" the charge supplied by the first and in this way relatively small doses are capable of producing fever apparently as high as desired: 105, 106 or 107 F. (40.5, 41 or 41.5 C.). The treatment of patients with resistant neurosyphilis by this method has been followed by clinical and serologic improvement.

Basic Bismuth Camphocarboxylate in Treatment of Syphilis.—Kolmer states that basic bismuth camphocarboxylate is a new compound of bismuth soluble in oil and more rapidly absorbed from the muscles with less local reaction than insoluble compounds of bismuth. It has proved of particular value for the bismuth treatment of children and especially of adults who do not bear well, or suffer excessively from, pain following intramuscular injections. Its maximum single tolerated dose by intramuscular injection in rats is about 0.3 Gm. per kilogram of weight. As the adult dose is 0.1 Gm., or about 0.0015 Gm. per kilogram, the amount ordinarily administered at one time is about 200 times less than the maximum tolerated dose for the rat. The intramuscular injection of ten to twenty doses of 0.0015 Gm. of basic bismuth camphocarboxylate to the lower animals at intervals of three or four days has produced no discoverable microscopic changes in the kidneys, liver and other organs. Single doses of 0.4 to 1.5 Gm. per kilogram have produced tubular nephritis of varying severity in rats. Intramuscular injections have produced less necrosis of muscle and more diffuse local reactions in guinea-pigs than injections of an insoluble salt of bismuth. They have also produced remarkably little pain and local reac-

tions in children and adults and are to be particularly recommended from this standpoint. Constitutional reactions or evidences of renal irritation have not been observed following a dose of 2 cc. of solution (0.1 Gm.) for adults and 1 cc. (0.05 Gm.) for children. This preparation is without demonstrable trypanocidal activity, as is true of bismuth compounds in general. The minimal curative single dose for rabbits with acute testicular syphilis has been about 0.02 Gm. per kilogram of weight, giving a chemotherapeutic index of about 15. It has caused the disappearance of *Spirochaeta pallida* from penile chancres less rapidly than bismuth arsphenamine sulphonate and has produced the healing of primary and secondary lesions less rapidly than arsphenamine and neoarsphenamine. It was absorbed from the muscles of guinea-pigs more rapidly than an insoluble salt of bismuth. The author found that basic bismuth camphocarboxylate possesses therapeutic effectiveness in the treatment of syphilis, and he particularly recommends it for the treatment of chronic acquired and prenatal syphilis because it is practically painless, produces little or no local reaction and is remarkably free of constitutional reactions.

Medical Journal and Record, New York

133: 469-520 (May 20) 1931

*Serologic Test with Hormone Organ Antigens: 1. Complement Fixation Test in Neoplastic Diseases, Pregnancy and Sex Determination. G. A. Wyeth, New York.—p. 469.
*New Pathology and Treatment of Chronic Alcoholism. E. S. Cowles, New York.—p. 472.
Interrelationship of Immunity and Allergy. J. W. Wiltsie, Binghamton, N. Y.—p. 476.
Cardiovascular Disease and Teeth. W. Lintz, Brooklyn.—p. 479.
Carcinoma of Bladder: Extensive Case Cured by Fulguration. H. Cohen, New York.—p. 483.
Modern Conception of Deafness. H. Hays, New York.—p. 485.
Thyroidal Obesity. I. Bram, Philadelphia.—p. 487.
Effects Produced by Ingestion of Extracts of Endocrine Glands. E. M. Ellison, Washington, D. C.—p. 494.
Seasonal Variations in Rate of Growth in Relation to Diet and Endocrine Glands. H. R. Harrower, Glendale, Calif.—p. 497.
Cardiac Hormone. L. Haberlandt, Innsbruck, Austria.—p. 499.
Improved Method of Implanting Radon Seeds. J. Muir, New York. —p. 503.
Nature's Own Remedies. R. Williams, Toronto.—p. 505.

Hormone Organ Antigens.—Wyeth describes his endeavor to prove the specificity of the Bordet-Gengou phenomenon with hormone organ extracts as antigens. A definite quantity of inactivated serum, with a dose of antigen plus guinea-pig complement, was incubated at 37.5 C. for one hour. After this incubation a dose of sensitized sheep cells was added and the mixture was again incubated for thirty minutes at 37.5 C. Readings were then made. This test was duplicated by the Kahn precipitation method. The following experiment was conducted to demonstrate an antigen-antibody complex with a specific antigen in the presence of its homologous immune serum: Rabbits were inoculated respectively with the hormone organ extracts of anterior pituitary, posterior pituitary, suprarenal cortex, thyroid, ovary (follicular and corpus luteum) and testis to produce specific immune serums. These immune serums in the presence of their homologous antigens gave complete inhibition, whereas in the presence of a heterologous antigen there was no inhibition. This proves the specificity of the antigens. These specific immune serums were used as positive controls throughout the experiments. In disease the most important observation was the constant presence of anterior pituitary antibodies in cancer and their absence in syphilis and in tuberculosis. This has led the author to believe that cancer is a disease of disturbed anterior pituitary secretion. So far the presence of anterior pituitary in benign growths (other than pregnancy) has been only weakly positive. Whether this will prove to be a determining factor between benign lesions and malignant lesions cannot be stated yet. Although suprarenal cortex inhibition appears concurrently with anterior pituitary in cancer, it should probably be regarded as an index to the individual's systemic condition rather than as an evidence of new growth. No statement of the interrelationship of these glands should now be attempted, but it has been observed that, in pregnancy, suprarenal cortex is uniformly negative while in tuberculosis, a wasting disease, it appears uniformly strongly positive. Another observation of this study was the persistent presence of corpus luteum antibody in all cases of cancer of the breast and its absence in other cancer conditions in the female, so far observed. The results to date are incomplete and leave much to be correlated, yet emphasis is laid on the fact that the presence of an antibody to anterior pituitary is the most significant factor in cancer.

Chronic Alcoholism.—Cowles states that a patient with a history of preceding alcoholism who shows an increased intracranial pressure, with increased globulin and albumin, almost invariably manifests emotional instability, and this emotional instability produces at times mild exaltation of personality or depression of spirits. The intracranial pressure, the emotional instability and the euphoria awaken subconscious memories and disordered associations, making the patient react abnormally to his otherwise apparently balanced life. What appears to be a manic depressive insanity or a manic depressive type of reaction in these patients in many instances is nothing more nor less than a train of symptoms due to to an increased intracranial pressure disturbing their mental and emotional reactions. In the face of this definite pathologic condition, drug treatment, psychotherapy, psychoanalysis and religious persuasion are all ineffective. Lumbar punctures, accompanied by the use of any medication that will help to reduce the intracranial pressure and meningeal irritation, constitute the only treatment which in the author's hands has given any degree of uniform and lasting results. Tapering off with small doses of alcohol should never be resorted to. Alcohol should be withdrawn at once. No narcotic is justified in the treatment of alcoholism. In the face of increased intracranial pressure, one must not assume that the patient is suffering from dementia praecox, manic depressive insanity or a psychotic condition of any sort until this pressure is sufficiently reduced to make it clear whether or not these conditions are secondary rather than primary factors and are incidental to intracranial pressure. Even when the patient does not present mental symptoms and does not give a history of mental, emotional or physical illness but is healthy, strong and robust in every way except for his periodic or habitual drinking, an increased intracranial pressure when found accompanied by globulin and albumin will produce at intervals an ebb and flow in his emotional reactions and will account for his drinking.

Public Health Reports, Washington, D. C.

46: 1227-1288 (May 22) 1931

*Epidemic of So-Called Ginger Paralysis in Southern California in 1930-1931. M. I. Smith and E. Elvove.—p. 1227.
Public Health Progress in Knoxville, Tenn. J. W. Mountin.—p. 1236.

Ginger Paralysis in Southern California.—Smith and Elvove made a survey of the epidemic of ginger paralysis that occurred in southern California during the latter part of 1930 and the early part of 1931. The investigation showed that, in the latter part of December of 1930 or early in January of 1931, adulterated fluidextract of ginger containing tricresyl phosphate was shipped from New York to Los Angeles and thence distributed through the retail drug trade in Los Angeles, San Pedro, Whittier, Sawtelle and possibly other nearby sections. The consumption of this beverage resulted in an epidemic of "ginger paralysis" comprising about 125 cases. The epidemic occurred for the most part during the last two weeks of January and the first two weeks of February. By the early recognition of this condition and the effective measures taken by the local city and county health departments to prevent the further distribution of this ginger extract, the epidemic was quickly brought under control. It is the authors' belief that, unless effective measures are instituted to stop completely the manufacture, distribution and sale of all misbranded fluidextract of ginger for beverage purposes, similar recurrences may be expected in the future in sections where "ginger paralysis" has not been known heretofore. Details are given of a comparatively simple technic whereby such adulterated fluidextracts of ginger may be tested, both chemically and pharmacologically.

Surgery, Gynecology and Obstetrics, Chicago

52: 921-1050 (May) 1931

*Anal Sphincter and Pathogenesis of Anal Fissure and Fistula. R. I. Hiller, Milwaukee.—p. 921.
*Use of Hypertonic Sodium Chloride Solutions to Stimulate Peristalsis. T. G. Orr, P. N. Johnstone and R. L. Haden, Kansas City, Kan. —p. 941.
*Hypertrophy of Pyloric Muscle in Adults. C. C. McClure, Cleveland. —p. 945.

*Effect of Ephedrine on Circulation of Dogs During Spinal Anesthesia. J. C. Burch and T. R. Harrison, Nashville, Tenn.—p. 953.
*Cicatricial (Benign) Stricture of Esophagus of Unknown Origin: Forty Cases. P. P. Vinson, Rochester, Minn.—p. 955.
*Further Observation on Transplantation of Epiphyseal Cartilage Plate. S. L. Haas, San Francisco.—p. 958.
*Diagnosis of Disproportion. H. Thoms, New Haven, Conn.—p. 963.
Technic of Subtotal Thyroidectomy. A. Brown, Omaha.—p. 971.
Radical Operation for Carcinoma of Tongue. P. M. Krassin, Kasan, U. S. S. R.—p. 976.
Clinical Applications of Bladder Tumor Pathology. P. W. Aschner, New York.—p. 979.
Cancer of Breast: Analysis of 108 Cases; Clinical Index of Malignancy. J. G. Stubenbord, Douglaston, Long Island, N. Y.—p. 1001.
Vesical Neck Obstruction: Presentation of New Instrument for Its Relief. T. J. Kirwin, New York.—p. 1007.
Making and Closing of Abdominal Incisions. J. L. Yates and F. Raine, Milwaukee.—p. 1020.
Olshausen's Operation for Suspension of Uterus. W. P. Graves and G. van S. Smith, Brookline, Mass.—p. 1028.

Pathogenesis of Anal Fissure and Fistula. — Hiller reviews historically the anatomy and physiology of the anal sphincters, as a basis for his study to explain the pathogenesis of anal fistula, abscess, fissure and postoperative incontinence. The constant location of the internal opening of anal fistula at 5 or 7 o'clock is explicable by the arrangement of the vessels in the anal triangle, the infection following the perivascular spaces. The anatomy of the external sphincter alone does not explain the origin of fissure, but the great accumulation of fibro-elastic terminations of longitudinal bowel fibers fixing the anterior and posterior commissures is probably a factor. The anatomy of the external sphincter may account for incontinence following stretching or incision of the sphincter, since, when its influence is removed, the efficiency of the internal sphincter becomes reduced because the mechanical stimulus necessary for the maintenance of resistance to a dilating force is lacking. The external sphincter consists neither entirely of fibers encircling the anus nor of fibers extending anteroposteriorly but is a mixture of the latter type with fibers encircling the anus either anteriorly or posteriorly in varying proportions.

Sodium Chloride Solutions to Stimulate Peristalsis.—Orr and his associates describe experiments which confirm the observations that hypertonic solutions of sodium chloride administered intravenously stimulate peristalsis. Some of the animals had bowel movements soon after the injection of hypertonic solution of sodium chloride. Some appeared to have discomfort, as if the increased bowel activity caused colic. The stimulating effect of hypertonic solution of sodium chloride on peristalsis is further evidence of its value in the treatment of paralytic ileus and following operation for the relief of intestinal obstruction.

Hypertrophy of Pyloric Muscle in Adults.—According to McClure, adults with pyloric stenosis present a varied and, at times, pitiful clinical picture. They seek aid from various physicians and are subjected to numerous roentgen examinations, each physician feeling that ulcer or a malignant condition should be demonstrated, and when a negative report is returned, usually the condition is diagnosed as "nervous indigestion" and the common medicaments are prescribed, with little relief. When the true condition finally is diagnosed, a plastic operation will give these persons a new lease on life. To prevent an erroneous diagnosis, it is important to differentiate this condition from a spastic pylorus. This may be done by the administration of atropine, preferably hypodermically. If the deformity seen roentgenologically is due entirely to pylorospasm, sufficient atropine will relax the musculature. If it is produced by hypertrophy of the pyloric muscle, even though the atropine will relax any accompanying spastic condition of the thickened muscle it will not cause complete disappearance of the pyloric constriction. While recognizing the interest and importance of determining the etiology of pyloric stenosis in adults, the author urges the greater need of its recognition in every case in which it is present and its appropriate treatment by a sufficiently radical operative procedure. Palliation by medical treatment only postpones the day when operation is imperatively required and prolongs the patient's sufferings.

Effect of Ephedrine on Circulation.—Burch and Harrison state that ephedrine injected intravenously caused a rise in the blood pressure and the cardiac output of dogs under spinal anesthesia. Ephedrine injected intraspinally caused an even greater rise in blood pressure. The arterial tone was increased in dogs by ephedrine. The administration of ephedrine to dogs under spinal anesthesia decreased the susceptibility of such animals to hemorrhage.

Cicatricial Stricture of Esophagus.—On the basis of a study of forty cases of benign stricture of the esophagus of unknown origin, Vinson states that this condition occurs rather frequently. In more than half of the cases, the stricture is in the lower third of the esophagus and is single, short and not particularly dense. The chief symptom is dysphagia, but pain and regurgitation of blood may be present. The history and results of examination may suggest malignant disease of the esophagus, and absolute diagnosis may be difficult. Roentgen examination may give negative results or may suggest lesions other than benign stricture. Dilation for both malignant and benign stricture of the esophagus is advocated.

Transplantation of Epiphyseal Cartilage Plate.—In his endeavor to present further evidence for or against transplantation of the epiphyseal cartilage plate, Haas performed the following group of experiments on young, growing rabbits: (1) reimplantation of the epiphyseal cartilage plate with a thin layer of adjoining osseous tissue; (2) reimplantation of the reversed epiphyseal cartilage plate; (3) reimplantation of the entire epiphysis and epiphyseal plate; (4) reimplantation of the epiphysis with varying lengths of the diaphysis; (5) reimplantation of the epiphyseal plate with a portion of the epiphysis and diaphysis; (6) reimplantation of the epiphysis and piece of diaphysis with the epiphyseal cartilage plate destroyed, and (7) check experiments in which the epiphyseal cartilage plate of both the radius and the ulna was destroyed. From these experiments he concludes that the epiphyseal cartilage plate loses its function of producing length growth after transplantation. Unless more definite experimental evidence is presented to prove the viability of the epiphyseal cartilage plate after transplantation, one is not justified in attempting such a transplantation in man with the expectation of obtaining length growth.

Diagnosis of Disproportion.—In roentgen pelvimetry of the superior strait, Thoms places the patient in the semirecumbent position on the table, with the tube from 30 to 36 inches above the plate. The superior strait is made as nearly horizontal as is consistent with the comfort of the patient. The level of the superior strait is established by means of calipers. The distances between the top of the symphysis and the top of the table and between the depression beneath the fourth lumbar spine and the top of the table are then measured. The tube is centered as nearly as possible over the center of the superior strait. In general, this point is 5 cm. posterior to the upper border of the symphysis. A suitable exposure is made, and the patient is removed from the table, the tube and exposed plate remaining in position. A lead sheet with perforations exactly 1 cm. apart is now introduced in the same plane as that previously occupied by the superior strait, and a flash exposure is made on the same plate. Development of the plate reveals the outline of the superior strait and the exposed dots. The space between each two dots equals a distance of 1 cm. in the plane of the superior strait. Calculations are made directly on the film by counting the dots in the diameter to be measured.

Texas State Journal of Medicine, Fort Worth

27: 1-58 (May) 1931

Diagnosis in Modern Medicine. F. de P. Miranda, Mexico City.—p. 6.
Significance of Spinal Cord Manifestations in Pernicious Anema. M. L. Graves and M. G. Pearce, Houston.—p. 9.
An Anatomist Among Neurologists. W. Keiller, Galveston.—p. 11.
Urticaria Due to Food Allergy. I. S. Kahn, San Antonio.—p. 14.
Pyelitis in Children. W. B. Reeves, Greenville.—p. 18.
Phytobezoar with Gastric Ulcer; Case. L. W. Pollok, Temple.—p. 20.
Foreign Bodies of Rectum. C. Rosser, Dallas.—p. 23.
Case of Brain Abscess. W. O. Ott, Fort Worth.—p. 25.
Tetanus Antitoxin: Study of Local and General Reactions in 1,884 Cases. C. Thomas, Houston.—p. 26.
Fracture of Jaw. G. R. Enloe, Fort Worth.—p. 27.
Some Interesting Facts Concerning Backache. C. C. Green, Houston.—p. 29.
Suggestions Regarding Hand Infections. I. C. Chase, Fort Worth.—p. 31.
Reducing Disease Hazards Through Milk Sanitation. J. C. Anderson, Austin.—p. 34.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British J. Dermatology & Syphilis, London

43: 217-276 (May) 1931

*Radon in Dermatology. W. J. O'Donovan and R. T. Brain.—p. 217.
Case of Generalized Acrodermatitis Continua vel Perstans. J. F. Christie and T. E. Anderson.—p. 234.

Radon in Dermatology.—O'Donovan and Brain state that, although radon has been widely used for the treatment of skin lesions, the marked differences between schemes of dosage led them to investigate the problem independently in a large outpatient department. They demonstrated that excellent results can be obtained with radon by a simple technic, which for routine purposes should be limited to the use of platinum seeds.

British Journal of Ophthalmology, London

15: 257-304 (May) 1931

*Simple Detachment of Retina: Seventy-Five Cases. J. H. Doggart and C. D. Shapland.—p. 257.
Diffuse Neurofibromatosis with Proptosis. R. F. Moore.—p. 272.
Angioid Streaks and Their Relation to Form of Central Choroidal Disease. R. D. Batten.—p. 279.

Simple Detachment of Retina.—During the year 1930, Doggart and Shapland observed seventy-five patients with retinal detachment who were submitted to the operation of cautery puncture by Gonin's method. Of these seventy-five patients, twenty-four were discharged with the retinal detachment back and the visual field full; twelve showed improvement either in visual field or visual acuity; the remaining thirty-nine were either unchanged or made worse. To obtain 32 per cent of cures and 16 per cent of improvements in such a serious and hitherto almost hopeless condition as detachment of the retina is indeed striking, especially as the method was an entirely new one and but little attempt was made to select cases during the first six months of the year.

British Journal of Tuberculosis, London

25: 59-106 (April) 1931

Intravenous Pyelography in Urinary Tuberculosis. J. Everidge.—p. 59.
Psychologic View of Tuberculosis Problem. H. Banister.—p. 62.
Domiciliary Treatment of Tuberculosis. B. T. J. Glover.—p. 70.
Asthma and Tuberculosis. L. Hofbauer.—p. 77.
Education and Physiologic Life: Open-Air School.—p. 80.

British Medical Journal, London

1: 781-832 (May 9) 1931

*Observations on Fractures of Neck of Femur. R. Jones.—p. 781.
*Spinal Anesthesia: 250 Consecutive Cases. A. W. Adams.—p. 785.
*Treatment of Disseminated Sclerosis by Liver. A. Goodall and J. K. Slater.—p. 789.
*Wood's Glass in Diagnosis of Ringworm. J. Kinnear.—p. 791.
Appendiceo-Caecal Intussusception. E. N. MacDermott.—p. 793.
Infarction of Heart with Pericardial Effusion in Young Phthisical Subject. T. A. Hughes and M. Yusuf.—p. 794.

Fractures of Neck of Femur.—Jones believes that operations in old patients with fracture of the femur take a secondary place compared with primary mechanical treatment. The cases left for operation are usually neglected ones. United and malunited fractures occurring in the virile (for which reconstructive operations are needed) should rarely occur if subjected to the abduction method. But one cannot be astonished at the unsatisfactory results in fractures of the neck generally when a spirit of pessimism and laissez-faire governs the treatment of the aged. One should realize that the aged, subjected to appropriate mechanical fixation, are less in danger of death than when their fractures are untreated.

Spinal Anesthesia.—From the study of 250 consecutive cases of spinal anesthesia, Adams concludes that a perfect and safe surgical anesthesia is obtainable in about 88 to 98 per cent of operations in the abdomen and legs. The lower figure occurs with the higher levels of anesthesia. Anesthesia is not derived from the introduction of narcotics into, and the altered chemistry of, the blood, but merely by the transitory interruption of conductivity in the nerves of the lower part of the body. The apparatus required for spinal anesthesia is simple and can be carried in the pocket. The dose, except in childhood, is standardized and varies only with the level of anesthesia desired. This makes for ease and safety and is an advantage over other anesthetics. The metabolic processes of the body are reduced during the operation for one to one and a half hours, thus conserving energy. With recovery from paralysis, the rested heart, vessels, muscles and glandular organs are found working with notable buoyancy and renewed strength. The patient's muscles relax completely, as if aiding, rather than resisting, the surgeon's maneuvers. Undisturbed tranquillity reigns in the field of operation, and smooth, easy working results, which saves the strength of both patient and surgeon and minimizes the trauma to tissues. The paralysis of inhibitory sympathetic nerves to the intestine assists by encouraging peristalsis and bowel clearance in cases of intestinal obstruction; indeed, spinal anesthesia is used as a treatment for paralytic ileus. The patient is returned to the ward conscious and quiet. No recovery restlessness ensues. So are spared his stitched and wounded tissues, his recuperative powers, and the time and energy of the nursing staff. Food is taken early, and the body tissues are ready to digest and to use it.

Liver Treatment of Multiple Sclerosis.—Goodall and Slater report five consecutive cases of multiple sclerosis of varying duration and severity, treated with whole liver with remarkable improvement. Promising results have been obtained in later cases of too short duration to justify record. It is suggested that multiple sclerosis may form an addition to the list of deficiency diseases.

Wood's Glass in Diagnosis of Ringworm.—According to Kinnear, hairs infected by *Microsporon audouini* are brilliantly fluorescent in light filtered through Wood's glass (glass containing nickel oxide). This fluorescence is characteristic and constant and is coextensive with the infection. The diagnosis and estimation of cure of this form of ringworm is easy and certain by this means. Hairs infected by other forms of ringworm are insusceptible of detection by this method with any certainty. Hairs affected by favus give a faint fluorescence. Wood's glass is of value in aiding the diagnosis of this condition. Almost any scaly condition of the skin will give a fluorescence; attention should therefore be paid only to the presence or absence of fluorescing hairs in the detection of ringworm of the scalp. In the case of microsporon ringworm, the fluorescence is due to the presence of *M. audouini* in the hair; in other cases, to the fluorescent properties of keratin. Any ordinary white light may serve as a source of illumination, provided it is of sufficient intensity, and ordinary glass does not impede the necessary rays; condensers may therefore be used without interfering with the phenomenon.

Journal of Pathology and Bacteriology, Edinburgh

34: 301-400 (May) 1931

*Experimental Tar Tumors in White Rat. A. F. Watson.—p. 301.
Repair in Vitro of Embryonic Skeletal Rudiments After Experimental Injury. Janet S. F. Niven.—p. 307.
Observations on Salmonella Agglutination and Related Phenomena: Fixation of Somatic Agglutinins by Receptors in Solution. P. B. White.—p. 325.
Occurrence of Intranuclear Inclusions in Nerve Cells in Poliomyelitis. E. W. Hurst.—p. 331.
New Lithium Selective and Enrichment Methods for Isolation of Salmonella Organisms. J. D. A. Gray.—p. 335.
*Primary Carcinoma of Bronchus. E. E. Atkin.—p. 343.
*Tumor Immunity: Effects of Euglobulin and Pseudoglobulin Fractions of Anticancer Serums on Tissue Cultures. T. Lumsden.—p. 349.
Effects of Repeated Intrapleural Injections of Electrolytes in Rabbit: Acquired Insensitiveness of Lung Epithelium to Proliferative Stimulus: Bearing of Observations on Tissue Resistance. J. S. Young.—p. 357.
Case of Agranulocytosis with Intestinal Changes. B. Nordgren.—p. 379.
Capillary Hemangioma of Cerebrum. W. G. Barnard and F. M. R. Walshe.—p. 385.
Multiple Teratomas of Peritoneum. W. G. Barnard.—p. 389.

Tar Tumors in Rats.—Watson produced skin tumors in two male and two female rats from an original litter of six males and five females by means of the periodic treatment of the skin with a gas-works coal tar, each application of tar being preceded by treatment of the skin with a petroleum ether extract of rat tissues. Under the particular experimental conditions adopted, the tumors appeared during the period from 415 to 551 days after the first application of tar. The tumors of the males were squamous cell carcinomas in type and, once initiated, grew vigorously, one animal showing extensive metastases in the lungs, both kidneys and the pleural cavity. Inoculations of

the tumor tissue from these animals into normal rats were unsuccessful. The tumors of the females grew less vigorously and in only one case could any microscopic evidence of local infiltrative growth be obtained.

Carcinoma of Bronchus.—From necropsy observations in eighty cases of primary bronchial carcinoma in men and thirteen in women, Atkin concludes that the mean age of male patients with primary carcinoma of the bronchus is higher when it is a squamous cell growth than when the cells are of other types, the respective mean ages being 51 and 43.3 years in his series. Carcinoma does not appear to arise in one bronchus more frequently than in the other. The order of frequency of occurrence of metastases in the abdominal organs was liver, pancreas, kidney, suprarenal and spleen. In about half the cases no metastases at all were found. The squamous cell carcinomas exhibit a great tendency to necrosis and liquefaction. All the cases of definite cavitation found post mortem in the growth were in squamous cell tumors. The possibility that secondary deposits in the opposite lung are due to aspiration by way of the bronchus is suggested. All such metastases in the series occurred in cases of squamous cell carcinoma with a marked tendency to liquefaction.

Tumor Immunity.—Lumsden states that when the euglobulin and the pseudoglobulin fractions of an anticancer serum are isolated the euglobulin fraction contains all the antibodies that are specifically toxic to cancer cells; it also contains any heterotoxins which have escaped destruction during the process of fractioning. The pseudoglobulin fraction contains the antispecies bodies. By fractioning anticancer serum one can concentrate it tenfold, since the euglobulin fraction is ten times less toxic to mice than the equivalent quantity of anticancer serum from which it was made, although it has lost none of the original toxicity to the cancer cell. The author believes that experiments performed by him demonstrate beyond reasonable doubt the existence of antibodies having a specific affinity for cancer cells.

Journal of Physiology, London

71: 341-458 (April 24) 1931

*Metabolism of Lactose: Occurrence of Lactose in Urine. L. B. Winter.—p. 341.
*Does Muscular Contraction Affect the Local Blood Supply in Absence of Lactic Acid Formation? T. G. Ni.—p. 356.
Nomenclature of Autonomic Nervous System. E. Sharpey-Schafer.—p. 362.
*Effect of Temperature on Frequency of Heart and Respiration in Guinea-Pig and Cat. J. Barcroft and J. J. Izquierdo.—p. 364.
*Effect of Exposure to Cold on Pulse Rate and Respiration of Man. J. Barcroft and F. Verzar.—p. 373.
*Influence of Increase of Ureter Pressure on Isolated Mammalian Kidney. F. R. Winton.—p. 381.
Effect of Evisceration on Respiratory Metabolism of Decerebrate Preparation. I. A. Anderson, R. A. Cleghorn, J. J. R. Macleod and J. M. Peterson.—p. 391.
*Sugar Tolerance and Alcohol. N. Edkins and M. M. Murray.—p. 403.
An Apparatus for Measuring Transudation Through Living Membrane. J. A. Gunn.—p. 412.
*Variations in Activity of Cardio-Inhibitory Center. R. J. S. McDowall.—p. 417.
Relations Between Actions of Adrenalin, Acetylcholine and Ions, on Perfused Heart. E. Davis.—p. 431.
Regeneration of Visual Purple: Its Relation to Dark Adaptation and Night Blindness. Katharine Tansley.—p. 442.

Lactose in Urine.—Winter states that during the puerperium women frequently pass urine which contains an abnormally high concentration of reducing substances; lactose is the only sugar that has been separated from such urines. Before parturition it is uncommon for the reducing substances of the urine to be increased; when this occurs the sugar is dextrose. Identification of sugar in urine by condensation with phenylhydrazine may be misleading. The tolerance of normal men for lactose taken by the mouth is considerable. If excretion of lactose takes place after 50 Gm. doses, the amount is small and does not occur until two hours after taking the sugar. The immediate result of taking lactose by the mouth is an excretion in small amount of either dextrose or galactose, or possibly both sugars, depending on the individual. Lactose injected intravenously into rabbits is largely excreted unchanged, irrespective of the sex. This is also true of lactating animals.

Blood Supply to Muscles.—In experiments on frogs, Ni found that when the formation of lactic acid is prevented by poisoning with mono-iodo-acetic acid, muscular contraction can still increase the local blood supply by opening up more capillaries. Evidently lactic acid from the muscle is not an essential part of the mechanism which regulated the peripheral blood flow.

Effect of Temperature on Heart and Respiration in Guinea-Pig and Cat.—Barcroft and Izquierdo found that in the range of temperatures between 25 and 41 C. in deeply anesthetized cats the pulse rate and respiration rate rise gradually with the temperature. In lightly anesthetized cats the same is true at low temperatures about 33 C. plus or minus 1.5 degrees. Between that temperature and 38.5 C. plus or minus 1.5 degrees there is a region in which the relation of the pulse rate to the temperature is irregular. There is often a fall of pulse rate as the temperature rises and vice versa. The respiration rate reacts frequently in the same way. In the region between 38.5 C. plus or minus 1.5 degrees and 41 C. the pulse rate rises with the temperature and the respiration rate rises rapidly. The irregularities of the pulse rate are not abolished by doses of atropine sufficient to paralyze the vagal nerve endings in the heart. These irregularities are coincident with and are probably associated with shivering and the general syndrome of "sham rage." To that extent there is evidence of their being associated with the sympathetic supply of the heart.

Effect of Exposure to Cold on Pulse Rate and Respiration.—In their study of the effect of exposure to cold on the pulse rate and respiration of man, Bancroft and Verzar noted that, apart from spasmodic rises in the pulse rate associated with shivering, the pulse rate falls with the fall of body temperature. The spasmodic rises associated with shivering may amount to 40 per cent of the original pulse rate. The respiration shows marked summation of inspiratory movements during rigors that have deep and sustained inspirations. The oxygen consumption increases during the attacks of shivering by as much as 75 per cent of its value during rest.

Influence of Increase of Ureter Pressure.—Winton studied the influence of increase of ureter pressure by comparing its effects on one kidney with the effects of a decrease in arterial pressure of a second kidney, in experiments in which both kidneys were isolated and perfused with defibrinated blood from the same heart-lung circulation, and in which both secreted urine of approximately the same composition and at the same rate under the same initial conditions. When the rates of urine flow are thus reduced equally in the two kidneys, the changes in the urea and chloride contents of the urines are also equal. No regular change in the blood flow through the isolated kidney was detected as a result of increase of the ureter pressure up to a value (20 mm. of mercury) needed almost to abolish the flow of urine. It is inferred that an increase of ureter pressure increases the pressure of the fluid in Bowman's capsule and so retards the rate of production of the intracapsular fluid. No direct influence on the activity of the tubular epithelium has been detected. The applications of this hypothesis to the measurement of changes in the glomerular pressure, the permeability of the glomerular membrane, and the effective osmotic pressure of the plasma proteins are indicated.

Sugar Tolerance and Alcohol.—Edkins and Murray describe experiments in which they compared the tolerance of three persons to 75 Gm. of dextrose taken alone and with alcohol. They noted that the alcohol increases absorption, as shown by a more rapid rise in blood sugar. After alcohol the sugar in the blood falls more rapidly. The more diuresis the alcohol causes, the less the rise in blood sugar. The diuresis is associated with increased sugar tolerance and diminished output of chloride. The last three observations suggest a common origin in a depression of the activity of the pituitary body by the alcohol.

Variations in Activity of Cardio-Inhibitory Center.—McDowall investigated the activity of the cardio-inhibitory center by studying in different conditions the rate of the heart, the effects of stimulating the center by various means, and the effects of section of the vagi. He demonstrated that sensory stimulation and asphyxia, although they accelerate the heart and abolish the cardio-inhibitory reflex, result later in a condition in which the vagus center is more excitable and in which the normal vagus restraint of the heart is increased. Evidence is given which indicates that this change is due to an after-

discharge and facilitation of the cardio-inhibitory center. It is suggested that the slow pulse produced by prolonged exercise and by training is similarly produced, and it is indicated that the function of the vagus is related to the adaptation of the heart to the requirements of exercise.

Lancet, London

1: 897-950 (April 25) 1931

Orthodoxy and Heterodoxy in Surgery. W. H. Ogilvie.—p. 897.
Treatment of Functional Anorexia. R. S. Allison and R. P. Davies. —p. 902.
Heart Block Following Acute Appendicitis. L. Cole.—p. 907.
Sulphur and Turpentine Injections in Persistent Psychosis. D. MacMillan and A. M. Wyllie.—p. 909.
Sclerosis of Pulmonary Artery with Thrombosis. O. Brenner.—p. 911.
Treatment of Anal Fissure by Injection of Quinine Urea Hydrochloride. C. Howard.—p. 914.

1: 951-1008 (May 2) 1931

Spleen: Its Structure, Functions and Diseases. J. W. McNee.—p. 951.
*Nonoperative Treatment of Senile Prostate. J. C. Webb and S. L. Mucklow.—p. 957.
*Cavernous Sinus Thrombosis: Fatal Complication of Minor Facial Sepsis. W. G. S. Brown.—p. 960.
*Spontaneous Tumors in Mice: Influence of Diet and Age. L. Hill. —p. 966.
*Unusual Complications of Diphtheria. E. N. Chamberlain and S. Alstead.—p. 970.
*Thoracoscopic Technic Influenced by Type and Position of Adhesions. F. G. Chandler.—p. 971.

Nonoperative Treatment of Senile Prostate.—Webb and Mucklow believe that surgical intervention is called for in all cases of senile prostate in which there is much residual urine, definite enlargement into the bladder as proved by cystoscopic examination, cystitis, or evidence of back pressure affecting the kidney. When these conditions are not present, high voltage roentgenotherapy with or without diathermy and static wave is to be employed. In cases of small hard fibrous prostate the last two forms of treatment alone often give the best results. The nonsurgical methods are also indicated in the early cases, when the heart, lung or general condition, or age of the patient, contraindicates operation and when the patient or his friends are opposed to surgical intervention unless absolutely necessary. When relief has been obtained it is important that the patient be kept under regular periodic observation; for the condition is a progressive one, the symptoms may recur and further application may be necessary to keep the progress of the malady in check. The authors make no mention of ultraviolet therapy or prostatic massage, since they consider the treatment described as infinitely superior.

Cavernous Sinus Thrombosis.—According to Brown, cavernous sinus thrombosis occurs in a small percentage of cases of infection about the nares and upper lip. It occurs owing to the close and free connection between the angular vein and the cavernous sinus. It occurs as a result of small infective foci in which the tension is high, resulting in a rapid diffusion of the toxins with the invasion of a vein from without. Headache, which increases in spite of treatment to the focus, suggests this serious complication. Chemosis and proptosis are signs which leave no doubt that thrombosis has occurred. Orbital cellulitis is usually associated with the cause of cavernous thrombosis and should be considered in the diagnosis. Sphenoidal and ethmoidal sinusitis may be confused with this condition. A method of treating the septic focus that avoids the dangers of free incision is suggested. The treatment of the infected sinus is palliative, though drainage by one of the routes described by the author may be attempted.

Spontaneous Tumors in Mice.—Hill presents tables which show that spontaneous tumors occurred frequently in a stock of mice kept in excellent hygienic condition. The incidence varied considerably in successive stocks which were raised over a period of six years by random inbreeding. The variations on the same diet and bedding were large. Different diets, or beddings, had no apparent significant influence on the incidence. Tumors of the lung were common, and may perhaps be associated with the liability of mice to pulmonary infection.

Unusual Complications of Diphtheria.—Chamberlain and Alstead report two cases of unusual complications following diphtheria; namely, a case of complete heart block persisting eighteen years after the diphtheritic infection and causing practically no symptoms and a case of spastic hemiplegia following diphtheria and associated with mitral regurgitation. It is surmised that both the hemiplegia and the mitral regurgitation are due to an endocarditis occurring during the course of the diphtheria eleven years previously.

Thoracoscopic Technic.—Chandler states that, for string adhesions, division by electrocautery appears to be the best method; for large adhesions, diathermy. Whether to use one instrument or two—that is to say, whether to do everything through one cannula, involving one puncture only, or through two cannulas—seems to depend on visibility and ease of access to the parietal insertion of the adhesion. Other things being equal, the author believes that the one instrument method has a number of great advantages.

1: 1009-1062 (May 9) 1931

The Spleen: Its Structure, Functions and Diseases. J. W. McNee.—p. 1009.
*Bacillemia in Experimental Tuberculosis: Experiments on Mutation and Pathogenicity of Human Strain of Bacillus Tuberculosis. G. Dreyer and R. L. Vollum.—p. 1015.
*Deaminizing Power of Blood in Cancer with Regard to Arginine. A. Haddow.—p. 1021.
*Serum Treatment of Lobar Pneumonia. C. F. T. East.—p. 1023.
Treatment of Cancer of Rectum. P. Lockhart-Mummery.—p. 1025.
*Effect of Gamma Ray Irradiation on Red Corpuscles. T. V. Cooper. —p. 1026.

Bacillemia in Experimental Tuberculosis.—According to Dreyer and Vollum, a bacillemia is a regular occurrence in guinea-pigs infected with *Bacillus tuberculosis* of human or bovine type, of high or low virulence. From 152 guinea-pigs, including controls and unsuccessfully vaccinated animals, positive blood cultures were obtained in 91.4 per cent. In any group of animals under similar experimental conditions, infected with the same dose of the same strain of *B. tuberculosis*, positive blood cultures are less frequently obtained from those animals which live longest, although in them the tuberculous lesions are usually more pronounced. From experiments described, it seems likely that the "chromophobic" (unstainable, or mostly unstainable, and therefore also non-acid-fast) tubercle bacilli are of the greatest importance in the development of tuberculosis, experimental or clinical. This theory is supported by the frequency with which positive blood cultures are obtained when no acid-fast organisms can be detected in direct smears of the blood.

Deaminization Power of Blood in Cancer.—Haddow describes a method that he has used for the comparison as to urea content of equal volumes of citrated blood incubated under conditions of sterility in admixture with equal volumes of (1) 1 per cent arginine; (2) sterile distilled water. Preliminary results have pointed to the existence of a significant increase in urea concentration when blood from certain cases of malignant disease is incubated under these conditions with arginine. The presumptive evidence suggests that the effect produced may be attributed to the presence of a trace of arginase in the blood. This suggestion is in no case completely confirmed, as the ferment has not been separated from the material examined and destroyed in a control, say by boiling. The maximum effect has been observed in well advanced cases of malignant disease, particularly in those cases exhibiting marked involvement of lymph nodes. The tentative suggestion is made that a test based on the observation recorded might be utilized for diagnostic purposes.

Serum Treatment of Lobar Pneumonia.—East records results obtained by treating patients with lobar pneumonia with the polyvalent serum made by the Lister Institute. As soon as the diagnosis was made, and opportunity offered, the patient was given antipneumococcal serum either subcutaneously or intramuscularly. Sometimes two or three doses of 25 cm. each were given. The results obtained leave the author hopeful that in a considerable proportion of cases of lobar pneumonia the use of antipneumococcal serum may possibly save the patient's life or at any rate cut short a dangerous and trying illness. Twenty-five patients received serum, and thirteen of these appeared to derive benefit from it. In the remaining twelve, no demonstrable effect was obtained. From these results it seems reasonable for any practitioner treating a patient for lobar pneumonia to give a polyvalent antipneumococcal serum either intramuscularly or subcutaneously. The technic of intravenous injection is not at the command of every one, and the

administration of large doses of serum intravenously is apt to produce reactions that are disturbing. The results suggest that treatment on the lines employed will procure benefit to a certain number of patients with lobar pneumonia; certainly no harm can result even if the case is one that does not respond to serum owing to the infecting organism being of the wrong type of pneumococcus.

Gamma Rays and Red Corpuscles.—In order to provide one explanation for radium sensitiveness of nonnucleated red corpuscles and nucleated cells, Cooper suggests that in both instances irradiation modifies the limiting membrane so that its osmotic selectivity is impaired and, further, that the nuclear phenomena, which have been described by several observers, are in fact secondary changes. Some added weight is given to this theory by the work of Schwarz, who demonstrated that skin, rendered anemic by pressure, gave a subnormal reaction to irradiation. This suggests that, whatever change may occur in the cells, the fullest results appear only in the presence of a free blood supply.

1: 1063-1118 (May 16) 1931

Spleen: Structure, Functions and Diseases. J. W. McNee.—p. 1063.
*Surgical Treatment of Simple Ulcers of Body of Stomach. A. J. Walton. —p. 1070.
*Treatment of Tetanus by Intrathecal Injections of Carbolic Acid. S. Suvansa.—p. 1075.
*Treatment of Intestinal Obstruction. G. Miller.—p. 1078.

Surgical Treatment of Ulcers of Stomach.—Walton believes that the great benefit of posterior gastro-enterostomy in simple ulcers of the body of the stomach lies in its extreme safety. In his series of 690 cases of posterior gastro-enterostomy the total mortality was under 2 per cent while in a later series of 290 cases in this group there was no mortality and in the small group of 41 cases of ulcer of the body of the stomach in which this step was alone performed there were also no deaths. When an anterior anastomosis has to be performed owing to the large size and acuteness of the ulcer on the posterior wall, the mortality is naturally higher; his thirteen cases showed three deaths. Although the safety of the operation is an important factor in choosing the operative treatment for patients with large ulcers who are seriously ill from prolonged pain and vomiting or severe hemorrhage, it is largely offset by the risk of persistence of the ulcer, for this occurred in seven of the fifty-seven of his patients who had to be treated by this method. The chief objection to partial gastrectomy lies in the theoretical one of the removal of so large a portion of the normal stomach and the possibility of a later occurrence of a severe pernicious anemia, the frequency of which is difficult to estimate. Local resection, on the other hand, appears to be a much less severe procedure. In a series of 244 ulcers of the body treated by this method there were nine deaths, a mortality of 3.6 per cent, while in 28 hour-glass stomachs there were two deaths, a total of 272 cases with eleven deaths. There were, however, in this series two recurrences, one after excision of a simple ulcer and one after excision for an hour-glass stomach. The end-results are good with either method. In the series of cases watched for at least five years, local resection with gastro-enterostomy gave 88 per cent known cures, a figure which rose to 92.1 per cent if the untraced cases were omitted. Whenever possible, either a local resection with a gastro-enterostomy or a partial gastrectomy should be the operation of choice. In the author's hands, local resection has given the lower mortality and the highest percentage of late cures and is free from the objection that it removes a large portion of the normal stomach.

Treatment of Tetanus by Intrathecal Injections of Phenol.—Though the number of patients treated is as yet small, Suvansa ventures to form an opinion that phenol given intrathecally is a specific remedy against tetanus. Of fourteen patients treated, four died, but these were severe cases, having reached the final stage of cardiac and respiratory failure. There seems to be little doubt that the ten patients that recovered owed their lives to the phenol treatment for the cases were not of the mild variety that might end in spontaneous recovery. Any amount of serum which had been given inadvertently was not sufficient to effect a cure. Besides, in no case had it been given intrathecally. The intrathecal phenol treatment has been given without selection to all patients with tetanus admitted into the King Chulalongkorn Memorial Hospital from Jan. 26, 1930, to the end of 1930, with the exception of two moribund patients with tetanus neonatorum. The recovery in one case (tetanus neonatorum) was remarkable. The author injects from 30 to 40 cc. of a 1:400 solution of phenol in adults and from 12 to 20 cc. in children of about 12, adjusted according to the severity of individual cases.

Treatment of Intestinal Obstruction.—Miller states that to delay operation in intestinal obstruction until dehydration can be overcome by means of intravenous saline therapy, checked by observation of the blood chemistry values, would be unwise. It could only be of use in a small percentage of cases of simple obstruction of the small intestine, and these cases cannot be differentiated from the strangulated variety before operation. The rule of immediate laparotomy for intestinal obstruction must be adhered to and it must be constantly borne in mind that the mortality in these cases is directly proportional to the number of hours occurring between onset of symptoms and relief of obstruction. In cases in which the diagnosis is in doubt, the surgeon should never spend time in "masterly inactivity" or in observation of the further progress. A simple antero-posterior roentgenogram will confirm the diagnosis in ten minutes. The patient should proceed directly from the roentgen room to the operating room, where 1,000 cc. of physiologic solution of sodium chloride can be injected intravenously after the anesthetic has started, while the patient is being prepared for the operation. The injection can, of course, be continued during the operation. If desired, 15 Gm. of sodium chloride may be added to the physiologic solution of sodium chloride to hasten the return of the blood chlorides to normal. The author believes that such a procedure will reduce the unfortunately large and unnecessary mortality that occurs in so many hospitals from obstruction of the small intestine.

Medical Journal of Australia, Sydney

1: 395-426 (April 4) 1931

Hodgkin's Disease. L. Utz and Leila Keatinge.—p. 397.

1: 491-520 (April 25) 1931

Public Health in Australia: Part 1. First Forty-Two Years. J. H. L. Cumpston.—p. 491.
Psychiatry and Medicine. W. S. Dawson.—p. 500.
Remarks on Penetrating Peptic Ulcer. E. M. Fisher.—p. 503.

South Africa M. Assn. Journal, Cape Town

5: 209-236 (April 11) 1931

Sterilization of the More or Less Unfit. H. Bodkin.—p. 211.
Irregular Heart Beat. E. E. Wood.—p. 212.
An Unusual Electrocardiographic Tracing. J. Drummond.—p. 215.
Ambulatory Treatment in Surgery. G. Sacks.—p. 218.
"Avertin" Anesthesia. G. Hochschild.—p. 220.
Schistosomiasis in Nyasaland, and Its Treatment. W. L. Gopsill.—p. 222.

5: 237-268 (April 25) 1931

Tonsil Problem. E. A. Greenberger.—p. 243.
Preliminary Note on Case of B. Abortivo-Equinus Infection. L. J. J. Orpen and F. E. Robinson.—p. 247.
Construction of Microcamera, Also Utilizable for Telephotography, at Maximum Cost of Two Pounds. W. L. Gopsill.—p. 248.
Resistance of Lamina Cribrosa as Factor in Glaucoma. D. J. Wood. —p. 251.

China Medical Journal, Shanghai

45: 297-384 (April) 1931

Lateral Sinus Thrombosis of Otitic Origin: Four Cases. A. M. Dunlap and M. L. Hu.—p. 297.
Cavernous Sinus Thrombosis of Otitic Origin: Two Cases. A. M. Dunlap and M. L. Hu.—p. 319.
Typhoid and Paratyphoid Fevers in Chengtu, Szechwan. S. D. Du and A. E. Best.—p. 325.
Studies in Parasitology of Malaria. R. Knowles and R. S. White. —p. 332.

Japanese J. of Obstetrics & Gynecology, Kyoto

14: 1-64 (Feb.) 1931

Antigenic Properties of Organ Lipoids (Alcohol Extract) of Human Fetus and the New-Born. M. Abe.—p. 2.
Factors Concerned in Generation of Ulcus Ventriculi Complicating Pregnancy. S. Nakayama.—p. 44.
Investigation of Histologic Change in Plant Shoots Caused by Roentgen Rays: Especially Effect on Arrangement of Tissues in Seed of Vicia Faba. K. Narimatsu.—p. 50.
Statistical Observation of Ear Length and Ear Width of Mature Japanese New-Born and Instance of Microtia. H. Fujimori.—p. 59.

Bull. et Mém. de la Soc Méd. des Hôpitaux de Paris

47: 589-643 (April 27) 1931

Dysmyelinic State of Corpus Striatum with Hypothalamic Attack. G. Guillain and P. Mollaret.—p. 592.
Pellagra with Paraplegia: Case. G. Guillain, P. Mollaret and J. Lereboullet.—p. 597.
*Chronic Syphilitic Anterior Poliomyelitis: Pseudomyopathic Form: Case. P. Harvier, J. Decourt and A. Lafitte.—p. 604.
Fulminating Purpura: Septicemia Due to Diplococcus Crassus. P. Harvier and R. Cattan.—p. 611.
Diabetes Associated with Lithiasis: Influence of Surgical Drainage on Tolerance to Carbohydrates. P. Harvier and J. Caroli.—p. 616.

Chronic Syphilitic Anterior Poliomyelitis.—In their studies on myopathies, Harvier and his collaborators observed a case of the pseudomyopathic form of chronic syphilitic anterior poliomyelitis. They conclude that chronic anterior poliomyelitis may in certain cases present a pseudomyopathic aspect. It is the topography and not the nature of the lesions which invokes the morphology of the myopathies. One understands, therefore, that the derangements in the peripheral motor neuron are in a position to bring on the morphologic changes and the disordered motility, which constitute the most striking symptoms of the myopathies. The diagnosis of myopathy gives a grave prognosis since the condition is incurable and usually takes on an inexorably progressive course; even the offspring of the patient are menaced, because of the familial character of the disease. The lesions of the peripheral motor neuron with pseudomyopathic symptomatology have an entirely different prognosis, corresponding to their nature. Chronic anterior poliomyelitis is more serious; nevertheless, in the authors' case the syphilitic origin of the ailment allowed one to hope for favorable results from antisyphilitic treatment.

Journal d'Urologie Médicale et Chirurgicale, Paris

31: 217-320 (March) 1931

Treatment of Pyelonephritis in Pregnancy. Misrachi.—p. 217.
*Renal Tuberculosis in Children: Four Cases. A. Bekkerman.—p. 236.
Gonorrheal Keratosis: Case. L. Strominger.—p. 251.

Renal Tuberculosis in Children.—Bekkerman, after a comprehensive bibliographic review of the subject and a report of his own four cases, concludes that: 1. The laws which govern the condition of children with renal tuberculosis are the same as for adults. 2. Renal tuberculosis in children is not frequent. It was established that this disease occurs in much lower ages and its frequency increases with the age. 3. The mortality is inversely proportionate to the age. 4. In the majority of cases one succeeds in discovering the primary focus of tuberculous infection. 5. Each time one observes an anomaly in a child's renal system, as a rule, it is indispensable to proceed with a complete urologic examination, without taking into consideration the patient's age and utilizing, where indicated, an adequate instrumentation. 6. Lack of technic and absence of necessary apparatus as well as certain peculiarities of the disease hinder in certain measures the possibility of an early diagnosis. 7. The treatment in children is the same as in adults (usually nephrectomy). 8. In a number of patients with pulmonary tuberculosis cared for at dispensaries, one has to associate those disorders with urogenital tuberculosis.

Paris Médical

1: 405-440 (May 2) 1931

Diseases of Nutrition. F. Rathery and M. Rudolf.—p. 405.
Dietetics and Hematopoiesis. G. Mouriquand and L. Weill.—p. 421.
*Diagnosis of Gout by Escudero's Tests. Caranegra.—p. 426.
Parathyroid Syndromes. P. Sainton.—p. 427.
*Serum Albumins in Diabetes Mellitus. F. Rathery and Lévina.—p. 436.

Diagnosis of Gout by Escudero's Tests.—In his studies of the diagnosis of gout, Caranegra reaches the following conclusions: Any patient with an articular disease in whom there is an elimination of 50 per cent of purines in twenty-four or forty-eight hours after their ingestion should not be considered as having a gouty arthropathy. Those who eliminate only 35 per cent of ingested exogenous purines must be considered as gouty. If a patient eliminates only from 35 to 50 per cent of purines there is a great probability that he is gouty, provided other symptoms which characterize the ailment are present.

Serum Albumins in Diabetes Mellitus.—Rathery and Lévina reach the following conclusions in their study of serum albumins in diabetes mellitus: In the severe types of diabetes the total amount of the albumins is only slightly above the normal; the amount of globulin, however, is much above normal in diabetes. The authors do not recommend that any definite conclusions be drawn in regard to the severity of the metabolic derangement on the basis of the entire amount of the serum albumins. Contrary to this, it seems to them that the amount of globulin should be just slightly increased and, chiefly, in the most severe forms of the disease. In their attempt to characterize the influence of insulin the authors state that there is observed a diminution in the amount of total albumin, which makes the therapeutic effect more marked. Insulin disturbs the serum ratio little if any; it only diminishes the globulin content by producing general improvement.

Presse Médicale, Paris

39: 633-648 (May 2) 1931

*Therapy in Arthritis. F. Coste, J. Forestier and J. Lacapère.—p. 633.
Treatment of Varicose Veins by Method of Sicard. L. Gaugier.—p. 636.

Therapy in Arthritis.—In the treatment of various types of arthritis, Coste and his collaborators differentiate the so-called rheumatism proper, considered as a disease of diathesis, and gout, chiefly characterized by its specific peculiarities and the group of intermediary events in which the rheumatic and the gouty diathesis seem to approach each other. They divide the treatment of arthritis into two parts; namely, general and local. In the general treatment they recommend that the diet be liberal and substantial. Among general measures they mention vaccinotherapy, which has to produce immunity, and chemotherapy, whose aim is to sterilize the infection. Chemotherapy has also to do with such specific medication as in syphilitic and heredosyphilitic rheumatism, which are relieved by the arsphenamine-bismuth treatment. The authors state that the so-called anti-infectious drugs naturally are indicated in the treatment of various forms of arthritis: colloidal metals (chiefly silver), methenamine, phenyl salicylate. There are other types of arthritis, for example the general progressive arthritis deformans of Charcot, in which the systematic and symmetrical localization, the trophic and vasomotor disorders lead to a supposition that there are extra-articular, sympathetic and endocrine factors which provoke these inflammatory or infectious arthrosynovial lesions. They briefly outline the use of physical therapy and crenotherapy in the local treatment of arthritis and close by making a differentiation between the treatment of purely clinical remissions of arthritis and those in which remissions are permanent.

39: 649-672 (May 6) 1931

*Diagnosis of Liver Insufficiency. M. Labbé and F. Nepveux.—p. 649.
*Icterohematuric Spirochetosis: Duration of Incubation Period. V. de Lavergne and Robert-Lévy.—p. 651.
Extra-Intestinal Amebiasis. R. Deschiens.—p. 654.
Antigens and Theories of Landsteiner. J. Albert-Weil.—p. 656.

Diagnosis of Liver Insufficiency.—In their studies on liver insufficiency, Labbé and Nepveux employed the method of Carnot and Mauban, the Bondi method and the method of Goiffon and Nepveux. They state that one should not conclude from some deficiency of these practical procedures in the study of duodenal intubation that the latter is useless in cases in which one suspects cancer of the pancreas or neighboring organs. The impossibility of such an intubation is in itself a diagnostic sign. The character of the secretion and its mixture with blood in notable proportions is another sign of great value. Although the intubation might provoke some oozing of blood, recognized by the microchemical reaction of Meyer with residual phenolphthalein, visible blood always indicates cancer of the duodenum, pancreas or biliary tract. In addition, the search for pus during the microscopic examination of the duodenal secretion might reveal an inflammation or an abscess in that region. The authors conclude that critical study of the principal methods of functional exploration of the pancreas demonstrates that some valuable information has already been obtained; the definite establishment of the coprologic balance, the test for digestion of stones, and the quantitative determination of pancreatic ferments in the duodenal secretion give the investigator a decisive response. They believe that for better results it is necessary to limit oneself to some of the proved methods of diagnosis.

Icterohematuric Spirochetosis.—De Lavergne and Robert-Lévy review the literature on spirochetal icterus. The duration of the incubation period of icterohematuric spirochetosis varies according to whether it is of hydric or surgical origin. The

former develops after a short incubation period, around five days, not exceeding, in exceptional cases, ten days. Surgical spirochetosis develops after a much longer incubation period, around fifteen days and almost always even much later. This difference shows that it is the duration of the incubation period which is especially controlled by the infective organisms and their virulence. Ingestion introduces into the system a much larger number of organisms than all other methods of penetration. But, as the authors stress throughout the article, the events which permit interpretation are not numerous. However, by bringing out definite conclusions already obtained, one may suppose that the question of the duration of the incubation period in icterohematuric spirochetosis in man is answered.

Revue Française d'Endocrinologie, Paris

9: 1-75 (Feb.) 1931

*Cutaneous Zones of Projection of Suprarenals. M. Bleicher.—p. 1.
Histogenesis of Thyroid of Mammals. P. Florentin.—p. 12.
Pineal Extract: Influence on Calcemia. S. de Candia.—p. 23.
Sclerotic Cyanosis with Endocrine Disorders: Three Cases. F. Nilus.—p. 33.

Cutaneous Zones of Projection of Suprarenals.—Bleicher states that the zone of the suprarenal projection on the osseous plane allows one to affirm the suprarenal seat of lumbar tumors and to interpret, therefore, their roentgenograms. Evaluation of the advantages of the knowledge of the relation of the suprarenals to the skeleton allows one also to establish a definite method of technic in the posterior access to the suprarenals. The determination of the zones of suprarenal projection on the dorsocutaneous plane is of an especial roentgenotherapeutic interest. It permits one to irradiate the suprarenals with a minimum of risk and a maximum of efficiency. The suprarenocutaneous quadrangular figure limits with a marked exactness the zone of application of the curative rays and avoids the useless or injurious irradiation of neighboring regions.

Revue d'Orthopédie, etc., Paris

18: 201-296 (May) 1931

*Fracture of Spine Without Spinal Cord Symptoms. C. Angelesco and G. Buzoianu.—p. 201.
Symmetrical and Hereditary, Congenital Ankylosis of Both Elbows. A. Mouchet and L. Saint-Pierre.—p. 210.
Complete Dorsal Dislocation of Great Toe with Injury to Sesamoids. E. Sorrel and P. Bufnoir.—p. 232.

Fracture of Spine Without Spinal Cord Symptoms.—In reporting a case of fracture of the spine without spinal cord symptoms, Angelesco and Buzoianu state that roentgenography showed the exact seat of the clinically supposed fracture while the spinal cord symptoms were still absent. In the authors' case the fracture was found at the level of the first cervical vertebra. Discussing the mechanism of secondary displacements and, therefore, the eventual possibility of a serious compression, the authors conclude from the study of their own case that a fracture of the anterior arch of the axis is incomparably more serious than one of the posterior arch, in which the displacement is minimal or absent. If the fracture at the time of the accident is not accompanied by an occipito-atloid or by an atlo-axoid dislocation the urgent treatment consists in immediate and rigorous immobilization. Only when the fracture of the cervical spine is accompanied by spinal cord symptoms of grave compression is a decompression indicated. During and after the operation the same rigorous immobilization must be maintained, without which one always runs a risk of a secondary and fatal displacement.

Archivio Italiano di Chirurgia, Bologna

28: 449-664 (April) 1931

*Abolition of Drainage in Circumscribed and Diffuse Purulent Peritonitis, Resulting Especially from Appendicitis. F. Marchini.—p. 449.
Cancer of Gallbladder. E. Gioja.—p. 603.
Effects of Chilling on Liver. R. Palma.—p. 621.
Aspiration of Fluids from Haller's Plexus and Periarterial Sympathectomy in Tuberculous Laryngitis. L. Durante.—p. 642.
Circulatory Changes Brought About in Epiphyses by Implantation of Bone Pegs. G. Sacerdote and G. Oselladore.—p. 648.

Abolition of Drainage in Peritonitis.—Marchini draws these conclusions: The peritoneum is provided with powers of natural defense, which can be increased to combat bacterial toxins—especially with the aid of artificial means. Drainage of the entire abdominal cavity is impossible. Not only tubular but also capillary drainage drains only limited zones and is often the cause of grave disturbances and notable injury. Abdominal drainage is valuable only in certain cases. On the basis of scientific researches and practical results, abdominal drainage can be abolished to advantage not only in acute appendicular types, as is now generally known, but also in purulent peritonitis, resulting especially from appendicitis, except for limited contraindications. It is understood that the essential condition for the abolition of drainage is the suppression of the primary cause of the peritonitis. The total closure of the abdomen even in the presence of pus is conceded in view of the increase in the specific resistance of the peritoneum caused by bacterial toxins—and especially by the toxins of *Bacillus coli*. Such a phenomenon may be included in the picture of "local immunity."

Archivio di Ostetricia e Ginecologia, Naples

18: 179-254 (April) 1931

Further Observations on Surgical Prophylaxis of Cancer of Neck of Uterus. F. Spirito.—p. 179.
*Hysterectomy in Hydatidiform Mole. R. Bompiani and G. Martinotti.—p. 184.
Researches on Anterior Hypophysis. E. Imparato.—p. 233.

Hysterectomy in Hydatidiform Mole.—Bompiani and Martinotti conclude that hysterectomy for a hydatidiform mole has the following indications: 1. In pregnancy, for (*a*) a destructive mole (if it is possible to reach a diagnosis); (*b*) grave hemorrhage actually occurring; (*c*) hemorrhages more or less copious occurring at short intervals; (*d*) grave anemia due to the mole and not secondary to it; (*e*) symptoms of hemiplegia; (*f*) symptoms of eclampsia when prompt evacuation of the uterus is impossible, and (*g*) if several symptoms are coexistent. 2. In childbirth, in case of grave hemorrhage during labor. 3. After birth, (*a*) when there is a conviction of incomplete expulsion or evacuation of the mole (possibly residue in process of putrefaction), or also in case of formation of septic thrombi—before they have produced emboli; (*b*) in case of hemorrhage post partum due to uterine inertia accompanied by toxic symptoms; (*c*) in case of persistence of toxic symptoms (especially if there is incoercible vomiting); (*d*) in case of persistence of ovarian cysts previously diagnosed, and (*e*) if there is a diagnosis of an implantation of chorionepithelioma. Hysterectomy on prophylactic grounds is indicated: (*a*) in women over 40 years of age; (*b*) in young women with rapid increase of the volume of the uterus; (*c*) in case of appearance of suspicious vaginal nodules; (*d*) if there is true vaginal metastasis or presence of pulmonary metastasis, and (*e*) in case of a destructive mole, from a prophylactic point of view, to prevent possible perforations of the uterus and the more easy implantation of chorionepithelioma. As to the therapeutic attitude in other cases of hydatidiform mole, spontaneous expulsion should be awaited in young women if the mole is dead and in young women whether the mole is dead or alive if the symptoms are not marked (slight albuminuria, occasional metrorrhagia); in all other cases the mole will be removed on the basis of the general rule that the conservative intervention be applied as early as possible. The mole will be removed (1) by means of digital or manual intervention (at the most by digito-instrumental intervention) associated (or otherwise) with a squeezing manipulation (if possible, with a dilation of the neck of the uterus, or (2) by means of abdominal hysterectomy in (*a*) women in whom the maneuvers required by digito-instrumental evacuation are dangerous owing to the possibility of an intrauterine infection; (*b*) young women with marked symptoms of a mole, in whom dilation of the cervical canal has proved impossible, and (*c*) women who wish to preserve their fertility when, however, owing to special conditions, a hysterectomy appears to be indicated; for example, if a destructive mole is suspected.

Pediatria, Naples

39: 457-512 (May 1) 1931

*Vaccinotherapy in Sepsis of Urinary Passages in Childhood. L. Auricchio.—p. 457.
Cerebrospinal Fluid in Tuberculotoxic Syndromes of Childhood. G. Genoese.—p. 477.
Hemorrhagic Myelophthisis-Aleukia in Childhood. M. Gerbasi.—p. 487.
Mongolian Idiocy and Congenital Cardiopathies. E. Tatafiore.—p. 498.

Vaccinotherapy in Sepsis of Urinary Passages in Childhood.—Auricchio reports the results obtained with autovaccinotherapy in seventy-two cases of infection of the urinary

passages. Complete recovery was effected in sixty-nine cases. In the other three cases the failure of the method was attributable in two instances to the coexistence of tuberculosis and syphilis, and in one instance to the probable existence of congenital malformations. The results of the treatment were satisfactory whatever the pathogenic organism isolated and whatever the age of the patient, for even young infants derive equal benefits from the treatment. The cure was verified by repeated microscopic examinations of the urine; there was never a recurrence of the disorder. On the basis of these observations, the author considers autovaccinotherapy as the most effective means of treatment in infections of the urinary passages and thinks that it should be employed not only in chronic or recurring types but whenever the ample administration of urinary antiseptics does not give prompt results and whenever the infection develops from the start with particular severity.

Policlinico, Rome

38: 615-654 (May 4) 1931. Practical Section

*Treatment of Fracture of Femur. G. Scollo.—p. 615.

Treatment of Fracture of Femur.—Scollo, after referring to the various methods of treating diaphyseal fractures of the femur, discusses more particularly the method of direct traction on the skeleton according to the Codivilla-Steinmann method. He reports eighteen cases of femoral fracture in which satisfactory results were secured by this method and considers that this should constitute in the majority of cases the normal method of treatment for diaphyseal fractures.

Riforma Medica, Naples

47: 553-592 (April 13) 1931

*Treatment of Diabetes Mellitus by Means of Irritants. G. Singer. —p. 555.

Alkali Reserve in Gastric and Duodenal Ulcer: Its Variations in Relation to Operative Treatment and Insulin Therapy. A. Rindone.—p. 558.

Hydropyonephrosis of Enormous Volume Caused by Retrograde Pyelography. C. Bruni.—p. 566.

Histopathologic and Immunologic Significance of Local and General Reactions Caused by Killed Tubercle Bacilli. M. Capocaccia.—p. 568.

Treatment of Diabetes Mellitus.—Singer reports the results he secured in the treatment of diabetes mellitus by his own method consisting of a standard diet and injections of protein substances capable of modifying favorably the metabolism of the diabetic person. He employs insulin only in the more grave cases. In all the others he applies his own method, from which he has secured, in the 300 patients treated thus far, highly satisfactory results and effects of surprising duration. The regimen consists of a fundamentally vegetable diet and of a supplementary nutrition containing the three nutritive elements in a definite proportion; namely, 100 Gm. of boiled or roasted meat, two eggs, 100 Gm. of fats and 50 Gm. of some equivalent of white bread. After observing on any given day a constant elimination of sugar, he begins the treatment, giving every two or three days injections of weak protein substances, beginning with small doses (0.5 cc.), which are gradually increased, by from 0.2 to 0.3 cc. at a time, up to a maximum of 5 cc. A second period of treatment follows the first, and in the second he uses more active sensitizing bodies. The treatment requires from six to eight weeks, on the average.

Prensa Médica Argentina, Buenos Aires

17: 1519-1558 (April 10) 1931

*Amino-Acids in Blood of Patients with Various Pathologic Conditions. M. R. Castex and P. M. Re.—p. 1519.

Benign Necrotic Osteitis of Auditory Canal. J. Layera.—p. 1536.

Morphine Addiction: Treatment. A. A. Martínez.—p. 1537.

Congenital Upward Displacement of Scapula (Sprengel's Deformity): Case. F. J. Nocito.—p. 1542.

Ludwig's Angina: Teatment by Production of Fixation Abscess. S. Jouan and F. Calonge Diez.—p. 1550.

Amino-Acids in Blood in Pathologic Conditions.—The amino-acid content of the blood was determined by Castex and Re in a group of 238 persons. The entire group included fourteen persons with normal nitrogen metabolism and the remaining persons were affected with various pathologic conditions. The estimations were made according to Folin's method, though in some samples of blood a technic of dealbumination by a 20 per cent solution of trichloracetic acid was also used. The authors conclude that the normal amount of amino-acids in the blood varies from 55 to 65 mg. per thousand cubic centimeters of blood according to Folin's method. Amounts of more than 70 mg. or under 50 mg. per thousand cubic centimeters of blood should be considered as hyperamino-acidemia or hypoamino-acidemia, respectively. In neoplasms the amino-acid values are found to be increased. Amino-acid values are found to be normal in fever, except in malarial fever and in febrile types of leukemia. In acute leukemia the values are increased. In disturbances of the basal metabolism, the values are found to be normal, though in some cases they increase in relation with the evolution of the metabolic disturbances. There is no relationship between the changes in amino-acids and the urea content of the blood. In normal persons and in diabetic patients the changes of the amino-acids in the blood bear no relation to the glycemia. No increase of the amino-acids is observed in the blood of patients with pathologic urobilinuria. Hepatic insufficiency favors the increase of amino-acids in the blood. There are, however, certain instances of hepatic insufficiency in which normal or even diminished amino-acid values may be present. In several conditions such as arterial hypertension, headache, mental diseases or some other morbid conditions which may be originated by diverse pathogenesis the variations of amino-acidemia should be interpreted as an indication of the disturbances undergone by the nitrogenous metabolism in the same manner that the variations of glycemia indicate disturbances of the carbohydrate metabolism. Hypo-amino-acidemia indicates either that the regimen given to the patient is low in nitrogen constituents or that in the organism there exists a mechanism of deamination not related to the functions of the liver and in probable relation with the pancreas or the thyroid. Hyperamino-acidemia indicates the presence of disturbances of the nitrogenous metabolism and the advisability of the administration of a diet low in nitrogen content; that is, a diet in which the nitrogenous food represents an amount as small as possible to maintain the proper nitrogenous equilibrium of the organism. Hyperamino-acidemia may be modified under the influence of insulin therapy. Insulin causes a greater decrease in the amino-acids of the blood than any other drug. It has been stated that glycine in small doses (of 0.5 Gm. if injected or from 0.5 to 3 Gm. if given orally) causes a decrease in the amino-acidemia. The authors have not had sufficient experience with the administration of dextrose and thyroid extract to draw conclusions with regard to their effects on the amino-acids in the blood. However, the importance of the thyroid in relation to the amino-acids makes them believe that thyroid extract may give good results if used to diminish the amount of amino-acids in the blood.

Deutsches Archiv für klinische Medizin, Berlin

170: 371-498 (April 18) 1931

*Relation Between Adenoma of Parathyroid and Diseases of Bones. Snapper and H. J. Boevé.—p. 371.

*Energy Metabolism and Acid-Base Regulation. D. Jahn.—p. 387.

*Influence of Intestinal Motility on Urobilinogen Content of Feces and of Urine. N. S. Belonogowa.—p. 436.

Diagnostic Significance of Small Ventricular Deflections in Electrocardiogram. W. Hallermann.—p. 445.

Clinical Studies on Allergic Diseases: Results and Criticism of Specific Desensitization in Hay-Fever. W. Berger and K. Hansen.—p. 458.

Variability of Normal Blood Picture. H. Glatzel.—p. 470.

Hypertrophy and Dilatation in Electrocardiogram of Experimental Disorders of Cardiac Valves. J. Jacobi, F. Baumann and A. Rikl.—p. 490.

Adenoma of Parathyroid and Skeletal Diseases.—In the pseudo-osteomalacic end stage of a case of osteitis fibrosa cystica generalisata (Recklinghausen disease) Snapper and Boevé observed that extirpation of an adenoma of the parathyroid effected rapid clinical cure. In a second case of Recklinghausen disease, in which the multiple cyst formation was accompanied by a slight generalized calcium deficiency of the skeleton, the extirpation of the adenoma was alone not effective in checking the progress of the disease. However, when, two months after the operation, medication with viosterol was introduced, the ossification of the cysts set in and a clinical cure was effected. In a third case, in which the disease was very mild, satisfactory results were obtained with viosterol, quartz lamp irradiation and calcium lactate.

Energy Metabolism and Acid-Base Regulation.—After discussing the foundations and the methods of their investigations, Jahn and his associates report their observations on the

following problems: (1) influence of gastric secretion on energy metabolism, (2) hormonal action on energy metabolism and on acid-base regulation, (3) dependence of energy metabolism following bodily exertion on acid-base regulation, (4) dependence of specific dynamic action of sugar on acid-base regulation.

Intestinal Motility and Urobilinogen Content of Feces and of Urine.—Belonogowa directs attention to the fact that the determination of the quantity of urobilinogen, which is eliminated with the feces and with the urine, is considered by many investigators as the best method for the estimation of the disintegration of the erythrocytes. She, however, stresses that before the urobilinogen can be detected in the feces or in the urine it has been influenced by many factors and it is probable that a portion of it is not detectable in the excretions. She found that in the intestine a comparatively large quantity of urobilinogen is lost, partly by resorption and partly by destruction, the latter being the larger factor. The loss is considerable, if the intestinal motility is normal, but if the motility is reduced the loss is still larger, whereas if the motility is increased the loss is less than in case of normal motility. The quantity of urobilinogen excreted in the feces, therefore, cannot be considered as the correct indicator for the disintegration of hemoglobin and for the length of life of the erythrocytes. If the estimation of the disintegration of the blood is to be based on the amount of urobilinogen excreted in the feces, it is necessary to consider the condition of the intestinal motility. The urobilinogen should be determined only if the motility is normal.

Deutsche medizinische Wochenschrift, Berlin

57: 745-788 (May 1) 1931

*New Methods of Serum Therapy in Scarlet Fever. U. Friedemann, Schmerel and Lukas.—p. 745.
*Use of Blood from Adults for Prophylaxis of Measles. K. G. Heymann and R. Bussel.—p. 747.
Classification and Course of Neurosyphilis. L. Dreyfus and K. Mayer.—p. 749.
Multiple Myelomas. A. Magnus-Levy.—p. 751. C'cn.
Therapy with Circulatory Hormone Preparations. R. von den Velden.—p. 753. C'cn.
Experiences with So-Called Heart Hormones in Treatment of Diseases of Heart and of Vessels. N. Poczka.—p. 756.
*Distribution of Antianemic Factor in Gastric Mucous Membrane. N. Henning and H. Brugsch.—p. 757.
Hemorrhagic Changes in Intestinal Mucosa and Intestinal Hemorrhages in Influenza. L. Dinkin.—p. 759.
Simplification of Blood Transfusion. H. Lampert.—p. 760.

New Methods of Serum Therapy in Scarlet Fever.—Friedemann and his associates point out that, although the therapeutic value of serum in scarlet fever is generally recognized, various obstacles prevent its general application. The first disadvantage is that too large quantities of serum are required. Another disadvantage is that the intramuscular injection of such large quantities of serum frequently causes serum disease. For this reason many physicians prefer not to give serum in the milder forms of scarlet fever. However, it has been noted that in the apparently mild cases there frequently develop complications, which could have been avoided if serum had been administered. The authors consider it desirable that in scarlet fever serotherapy should become just as generalized as in diphtheria, and for this reason they tried methods in which smaller quantities of serum would give the same therapeutic effect. Following the suggestions of other investigators, they resorted to intralumbar injection of from 2 to 5 cc. of concentrated serum. With these small amounts of serum (only about one tenth of the amount needed for intramuscular injection) the toxic symptoms of scarlet fever were promptly overcome in all the cases in which the intralumbar injections had been employed. However, in four of these cases complications developed and in three instances serum exanthems became manifest. In contradistinction to other authors, who ascribed the efficacy of the intralumbar injections to the fact that the antitoxin was brought into close contact with the central nervous system, Friedemann and his associates reasoned that the prompt action of the serum in intralumbar injection was due to the rapid resorption of the antitoxin, and consequently they hoped to obtain the same results with intravenous injection of the serum. Subsequently they employed intravenous injection of from 2 to 5 cc. of scarlet fever serum in twenty-six patients with scarlet fever. The result was that the fever and exanthem disappeared more quickly than following intramuscular injection, and the number of complications was small. But of greatest practical importance was the reduction in the number of serum diseases. In only two instances were slight urticarial exanthems noted, whereas in intramuscular injections serum disease developed in about one third of the cases. In the last part of the article the authors emphasize that only those serums can be used for intravenous injection which are free from phenol or from tricresol. They advise that serums for intravenous injection should be disinfected by fractionated heating rather than with phenol or with tricresol. Another factor to be considered in intravenous serotherapy is whether a patient has previously received horse serum, for instance in the form of certain diphtheria antitoxins. Unless complicated desensitization methods are employed in these patients, intravenous injection of serum is contraindicated. Moreover, there are also persons who have a congenital idiosyncrasy to horse serum. For this reason every intravenous serum injection should be preceded by an intracutaneous injection of 1 cc. of the serum, to which hypersusceptible persons react within ten minutes with an urticarial reddishness.

Use of Blood from Adults for Prophylaxis of Measles.—Heymann and Bussel assert that blood from adults in sufficiently large doses protects against measles. The size of the dose varies with the age of the child. Infants up to 1 year of age require about 20 cc., small children from 20 to 30 cc. For the higher age groups the required quantities are so large that it is not only difficult to obtain sufficiently large amounts but the administration is likewise difficult. For this reason the authors recommend that infants should be protected against measles with serum from adults. However, for older children and for severe cases the more effective, but also more difficult to obtain, convalescent serum should be used.

Distribution of Antianemic Factor in Gastric Mucous Membrane.—Henning and Brugsch made antianemic preparations from the various portions of the gastric and the duodenal mucous membrane of hogs and tested their therapeutic efficacy in pernicious anemia. They found that the powder prepared from the mucous membrane of the antrum is far superior to powders prepared from the cardia, the corpus or the duodenum.

Klinische Wochenschrift, Berlin

10: 769-816 (April 25) 1931

Origin of Intestinal Spasms. E. Freude.—p. 769.
Experimental and Clinical Observations on Organotherapy of Diseases of Liver and of Biliary Tract. H. E. Büttner.—p. 771.
Distant Action of Yeast Cultures on Various Micro-Organisms. Bürgers and W. Bachmann.—p. 773.
*Problem of "Encephalopathia Thyreotoxica." G. Wüllenweber.—p. 775.
*Muscular Atrophy in Melitensis Involvement of Spinal Column. F. Rawak and R. Braun.—p. 776.
*Reflex Hypertension in Measurement of Blood Pressure. A. Hirschbruch.—p. 778.
Simplified Respiratory Apparatus for Simultaneous Determination of Oxygen and of Carbon Dioxide. H. Schadow.—p. 783.
Fog Catastrophe in Meuse Valley South of Liége. F. Wolter.—p. 785.
Fishes as Test Objects for Pharmacologic Experiments. E. Herzfeld and P. Mayer-Umhöfer.—p. 788.
Aspects of Hemophilia. H. Simmel.—p. 789.

"Encephalopathia Thyreotoxica."—Wüllenweber reports the case of a man, aged 58, who until the spring of 1928 had always been healthy. Then he felt tired and dizzy, and although his appetite was good he lost rapidly in weight. Later he developed palpitation of the heart. When he came to the hospital, he was extremely emaciated. His basal metabolism showed an increase of 70 per cent, and he had an enormous exophthalmos. The Graefe and Möbius signs were positive and the outstretched hands showed marked tremor. The skin was dry, for the patient did not perspire. The pulse rate was 120 and the respiration 37, but there was no fever. Somnolence, lacrimation and excessive salivation were noted, the speech became bulbar and the facial expression became rigid. The exophthalmos was now of the highest degree and the pulse rate had increased to 144. Therapeutic measures were unsuccessful and in October, 1928, the patient died. The author points out that in this case there was a combination of hyperthyroid symptoms with bulbar signs and with symptoms of disease of the basal ganglions; however, the thyroid was not enlarged. He reported this case because of its similarity to cases described by Riese, Klien and Zondek, the latter having designated the condition as "coma basedowicum." Following Riese's sugges-

tion of the necessity for a careful examination of the brain of such patients, and also because he assumed changes in the sympathetic centers of the midbrain or in the medulla oblongata, the author made a histologic examination of the patient's brain, but he discovered no abnormalities. The necropsy and particularly the microscopic examination of the thyroid had likewise revealed nothing abnormal. In the conclusion the author states that for the present he considers it of minor importance as to what term should be applied to such conditions, whether Klien's term "encephalopathia thyreotoxica" or Riese's term "bulbar form of hyperthyroidism."

Muscular Atrophy in Melitensis Involvement of Spinal Column.—Rawak and Braun report a case of multiple muscular atrophy with slight sensibility disturbances. The atrophy developed about nine months after the patient had passed through a fever period in Malta. The neural changes stood in pathogenic relation to spondylitis-like vertebral processes. On the basis of roentgenoscopy a differentiation from other infectious vertebral processes was not possible. However, a positive agglutination test for *Brucella melitensis* and the exclusion of other possibilities of infection indicate that Malta fever was without doubt the etiologic factor.

Reflex Hypertension in Measurement of Blood Pressure.—Hirschbruch defines blood pressure reflex as that increase of the blood pressure, which in some persons develops as the result of a sudden maximal pressure of 350 mm. of mercury by the cuff of the sphygmomanometer. In this blood pressure reflex the hypertension is not produced as in Katzenstein's test by compression of arteries, but rather by direct influence on centripetal nerves. The blood pressure reflex is not like the increased blood pressure and the hyperemia produced in muscles during exertion, an expedient process, but it develops only in diseased conditions and in turn again causes disturbances. The irritability of the circulatory system causes a predisposition for spasms, such as stenocardia and vasomotor neurosis (Raynaud). The frequent irritation of the vessels necessarily leads to permanent hypertension and finally to anatomic changes in the vascular system. The abnormal reflex is caused by nervous excitability of the circulatory system. In estimating circulatory reflexes it is significant to determine to what extent psychic factors are involved. Hypertension of psychic origin develops especially as the result of pain, fear and anxiety. This form of hypertension is always accompanied by increase in the pulse rate. Concurrence of hypertension and of increased pulse frequency is therefore an indication that the increased pressure is partially or wholly the result of psychic factors. Increase in the blood pressure of less than 10 mm. cannot be considered as blood pressure reflex. In cases in which it is difficult to decide whether the increased pressure is of psychic origin (increased pressure with increased pulse frequency), the sphygmomanometer test should be repeated on another day, when the psychic excitement is overcome.

Medizinische Klinik, Berlin

27: 609-644 (April 24) 1931

*Demonstration of Cure of Gonorrhea. J. Jadassohn.—p. 609.
Cumulation and Cumulative Diseases (Thesaurismoses). E. von Gierke.—p. 611.
Lymphogranulomatosis Inguinalis. H. Löhe and K. Blümmers.—p. 614.
Percutaneous or Cutaneous Tuberculin Reaction? L. Lindt.—p. 615.
Clinical Experiences with Harmine in Treatment of Disorders of Extrapyramidal System. H. R. Müller.—p. 616.
Bence-Jones Albuminuria. A. Simons.—p. 621.
Fat in Plastic Operation of Facial Atrophy. E. Eitner.—p. 624.
Concentration of Bilirubin and of Intravenously Injected Dyestuffs in Region of Skin Wheals Produced by Intradermal Injection of Histamine. O. Klein.—p. 625.

Demonstration of Cure of Gonorrhea.—Jadassohn says that in the crusade on syphilis more progress has been made than in the crusade on gonorrhea, because: 1. There is no chemotherapeutic agent against gonorrhea comparable to arsphenamine in syphilis. 2. The detection of the source of infection is much more difficult in gonorrhea than in syphilis. 3. In patients with gonorrhea it is difficult to demonstrate complete cure; that is, the absence of gonococci. Even the most careful microscopic examinations and the various methods of provocation are not always reliable in the demonstration of complete cure. Of the methods that have been perfected in recent years and have been found helpful in investigations on gonorrhea, the author mentions the culture method and the complement fixation method. In regard to the culture method it is stated that it should be considered as an addition to the microscopic method, since when employed alone either of these methods might fail. In gonorrhea in women the culture method facilitates, hastens and confirms the diagnosis. In gonorrhea in men it has been observed that by means of the culture method gonococci may frequently be demonstrated in cases in which the microscopic examination was negative. The complement fixation method is of little or no importance in the diagnosis of gonorrhea; however, it is of great value in the diagnosis of complications. Of course the gonorrheal character of such conditions as epididymitis, prostatitis and adnexitis is usually recognized. Nevertheless, the differentiation from tuberculous and other infectious causes is sometimes difficult. In such conditions as the various forms of arthritis, of myositis and of iritis, which may be remote complications of gonorrhea, the possibility of a gonorrheal infection should be thought of and when the routine genital examinations have given a negative result, the simple complement fixation test should be resorted to. The author admits that the evaluation of the results of the complement fixation test is difficult, especially in the demonstration of the cure of gonorrhea, for a negative reaction does not always indicate the absence of gonorrhea and a positive reaction may persist after the gonococci have already disappeared. But when used in combination with other methods the complement fixation is not without value and should therefore not be omitted.

Wiener klinische Wochenschrift, Vienna

44: 533-564 (April 24) 1931. Partial Index

First Infection and Reinfection. F. Hamburger.—p. 533.
*Leukocytic Blood Picture with Aspects of "Pernicious Anemia" in Patient with Chronic Constitutional Anemia. Arneth.—p. 536.
Premature Separation of Placenta. H. Högler.—p. 537.
Relation Between Acidosis and Poisoning of Organism. O. L. E. de Raadt.—p. 540.
Surgical Therapy of Cholelithiasis. C. Ewald.—p. 550.
Prognosis of Tuberculosis in Nurslings. M. Zarfl.—p. 552.

Leukocytic Blood Picture with Aspects of "Pernicious Anemia."—Arneth points out that in former researches on the white blood picture in patients with pernicious anemia he had noted a considerable deviation to the right of the neutrophil cells and also of the other types of leukocytes. Thus not only is pernicious anemia characterized by typical changes in the red blood picture, but one may also speak of a typical leukocytic picture in pernicious anemia. The author further reports the clinical history of a man, aged 28, in whom following rickets a severe form of anemia had developed. The long duration of the disease (twenty-one years) and the condition of the erythrocytes and of the blood platelets spoke against pernicious anemia, but the qualitative examination of the leukocytes revealed the deviation to the right, which, according to former investigation, is characteristic of pernicious anemia. The erythrocytes presented the aspects that are typical for a secondary anemia. The observations in this case convinced the author that there are chronic, constitutional cases of anemia in which the leukocytic blood picture resembles the one that is typical for pernicious anemia and in which therefore the differential diagnosis has to be based on the condition of the erythrocytes and of the platelets. For the prognosis as well as for the therapy of such cases, the correct diagnosis is of greatest significance.

Zeitschrift für klinische Medizin, Berlin

116: 1-268 (March 31) 1931

Interrelation of Insensible Perspiration to Water Metabolism. S. Geréb and D. Laszlo.—p. 1.
Insensible Perspiration and Diathermy. E. May.—p. 14.
Insensible Perspiration and Basal Metabolism. D. Laszlo and A. Schurmeyer.—p. 22.
*Serous Meningitis: Eleven Cases. F. H. Lewy.—p. 36.
Macroscopic and Microscopic Structure of Cantharidal Vesicle in Various Diseases in Regard to Constitutional Conditions. L. Buday and K. Feledi.—p. 79.
Gas Metabolism in Various Forms of Hyperventilation. H. Herxheimer and R. Kost.—p. 88.
Consumption of Oxygen During Light and Heavy Muscular Work. H. Herxheimer and R. Kost.—p. 103.
Brugsch's Test in Examination of Liver Function. E. Gostynski.—p. 108.
Effects of Extracts of Liver, Spleen and Stomach on Rats After Splenectomy. L. von Varga.—p. 128.

Symptomatology of Trichinosis. W. Weitz.—p. 144.
Colloidosmotic Pressure of Blood. P. Meyer.—p. 174.
Physiology and Functional Pathology of Water Metabolism. K. Dresel and Z. Leitner.—p. 185.
Split of Diastolic Heart Tones. J. Pogány.—p. 206.
Etiology of Heart Diseases. G. J. Katz.—p. 214.
Metabolism in Healthy Persons Under Various Conditions. W. M. Boothby and H. Bernhardt.—p. 219.
Chronic Lead Poisoning. E. Zadek.—p. 241.

Serous Meningitis.—Lewy studied eleven cases of serous meningitis in regard to the so-called postmeningeal headaches. He brings out that among all known headaches and vertigo which are complained of by neurotics and persons with Ménière-like conditions one meets a number with objective neurologic symptoms. This picture is characterized by (*a*) focal manifestations which clearly indicate the location of the disease and refer to the frontal lobe or to the cerebral hemisphere; (*b*) the absence of pons varolii manifestations, except nausea and vomiting, which is proved by particularly lowered diastolic pressure in the central artery of the retina and is expressed by a spastic process in the basal cerebral arteries; (*c*) diminished albumin content of the cerebrospinal fluid; (*d*) peculiar and characteristic vestibular manifestations in the form of a unilateral increase of the tonicity of the eye muscles during caloric stimulation; (*e*) a circumscribed accumulation of air on the surface of the brain in encephalograms under a condition connected with ependymal adhesions and internal hydrocephalus. These disorders usually occur as sequelae to grave constitutional diseases with cerebral involvement, as in typhoid and typhus and influenza and as an associated syndrome in the nasal accessory sinuses or the ear. Pathologico-anatomically and genetically the cause must be considered as an inflammation—arachnitis serosa adhaesiva circumscripta—although this is not present at the time the clinical observation is made. Therapeutically in many cases encephalography with from 60 to 80 cc. of air has influenced the condition. On a subsequent encephalography one can observe in these cases no circumscribed collections of air on the surface of the brain. The question of permanent cure is largely dependent on the elimination of the original focus in the ear or in the nasal accessory sinuses. The correctly performed encephalography is not a serious intervention, but on no account should it be done without an absolute indication.

Zeitschrift für Urologie, Leipzig

25: 241-320, 1931

*Report on Three Hundred Suprapubic Prostatectomies. F. Suter.—p. 241.
Determination of Gonococcus Antigen in Urine. L. R. Leites and M. M. Israelson.—p. 245.
*New Symptom of Nephrolithiasis. D. Szenkier.—p. 250.
Lithiasis of Bladder and of Kidney. J. Račić.—p. 254.
Brucella Abortus Infection and Urology. K. G. Stenzel.—p. 267.
Diagnostic Errors in Diseases of Double Kidneys with Forked Ureters and Significance of Pyelography in Such Conditions. D. A. Wedenski.—p. 271.
Treatment of Acute Gonorrhea and of Its Complications. L. S. Sirota.—p. 288.

Report on Three Hundred Suprapubic Prostatectomies.—Suter summarizes his experiences in 309 suprapubic prostatectomies, of which more than 200 were done according to the same method. In discussing the indications for the operation he states that he does not agree with those surgeons who advise prostatectomy whenever an adenoma is present, regardless of subjective complaints or of secondary sequelae such as retention, residual urine or hemorrhages. By the early operation these surgeons hope to prevent carcinoma. However, the author and others found that an adenoma rarely develops into a carcinoma but that carcinoma usually starts from the prostate. Because of the fact that in many cases the hypertrophy of the prostate remains stationary and that in some cases the symptoms improve, the author considers operation as not always absolutely necessary but advises it only for those patients in whom the condition is painful or for those who require constant catheterization. He also found that for patients who undergo prostatectomy during the advanced stage of the disease the prognosis is not more unfavorable than in those who are operated on during the first stage, provided, of course, the former are carefully prepared for the operation. In discussing the preparations for surgical treatment the author evaluates particularly the tests of renal function. He thinks that one method is not sufficient, especially the mere determination of the blood urea, for the urea content of the blood is sometimes still normal when the renal concentration capacity is already extremely deficient. As valuable methods for testing the renal function he recommends the determination of the specific gravity of the urine, Volhard's test and particularly the indigo test. Cases which are inoperable can sometimes be made operable by conscientious and careful catheterization; for the other cases the two-stage operation is advisable. The author lists thirty-three such cases in which he resorted to the formation of a vesical fistula. In regard to the surgical technic he states that he always lets the patient rest in bed for several days before the intervention, and he introduces the self-retaining catheter even if there is only a small amount of residual urine. During these days of bed rest the renal function is tested and the vas deferens is resected. The author performed this minor intervention in the last 200 of his prostatectomies, because it prevents epididymitis. Of the various methods of anesthetization he found parasacral conduction anesthesia the most satisfactory. He considers tamponade as the best means for arresting hemorrhage, and for after-treatment he recommends continuous irrigation of the bladder with physiologic solution of sodium chloride. In summing up the results of his operations he reports a mortality rate of 4.3 per cent. He thinks that, since the average age of the patients is 66, a mortality of 5 per cent may be expected.

New Symptom of Nephrolithiasis.—Szenkier asserts that in the majority of cases of nephrolithiasis the diagnosis is easy. However, in some cases, especially during the stage of acute colic, the differentiation from acute appendicitis and from cholelithiasis is difficult, for although the so-called renal colic syndrome is so characteristic that its recognition alone should suffice for the diagnosis of nephrolithiasis, of the symptoms which compose it not one is pathognomonic for nephrolithiasis. Some of the symptoms may simulate ileus, others appendicitis, renal tuberculosis, hydronephrosis or floating kidney. Roentgen diagnosis and Goldflam's symptom are likewise not entirely reliable. Of especial value for the diagnosis of nephrolithiasis the author considers the fact that shortly after an attack of colic a hyperesthesia of the skin (Head's zone) is noticeable in the region from the tenth thoracic vertebra to the first lumbar vertebra. This symptom is manifest only in the acute and subacute cases. A longer period after the colic the hyperesthesia disappears on the diseased side and becomes manifest on the healthy side. The author further advances various theories as to how this symptom develops. In the conclusion he points out that this symptom alone cannot decide the diagnosis; however, because a pathognomonic symptom of nephrolithiasis has not been found as yet, it can be of value in connection with the other symptoms.

Zentralblatt für Chirurgie, Leipzig

58: 1041-1104 (April 25) 1931

*Topical Diagnosis of Renal Calculi. M. Zondek.—p. 1042.
*Plastic Operation for Epispadias by Means of Temporary Suturing into Scrotum. C. Springer.—p. 1047.
Double Renal Pelvis and Double Ureter Diagnosed by Iopax Pyelography. A. Troell.—p. 1051.
Cure of Melanosarcoma. K. Hugel.—p. 1054.
Profuse Renal Hemorrhages. D. Schwarz.—p. 1056.
*Linitis Plastica. F. Krauss.—p. 1060.
Avulsion Fracture on Flexor Side of Terminal Phalanx of Left Little Finger. E. Brandenburg.—p. 1065.
*Removal of Calcaneal Spur by Means of Lateral Incision. A. S. Tokmakow.—p. 1067.

Topical Diagnosis of Renal Calculi.—Zondek reports the case of a man, aged 35, with renal calculi. Roentgenography revealed that the right kidney, from which several years previously a calculus had been removed, now contained several calculi and in the left kidney there was one calculus. The case is noteworthy because roentgen examination revealed at first an extremely small right kidney and a left kidney of normal size. Palpation, however, indicated that the right kidney was not smaller than normal. From this it was assumed that the right kidney had a double pelvis, of which only the upper one was visible because it contained the contrast medium. The lower pelvis contained the calculus. A second roentgenogram was made of the right kidney, and this time the contrast medium was deposited lower. It was now found

that the lower pelvis was larger than the upper one. Thus it was demonstrated that the kidney had a double pelvis, the calculus being in the lower one. The two ureters were united to one tube, which entered the bladder at the normal site.

Plastic Operation for Epispadias.—Springer describes a plastic operation for epispadias, which he performed on a boy, aged 2. The procedure can be characterized as a sac formation, similar to that which was recommended by Ombrédanne. However, the author employs a larger skin flap, which he takes not only from the penis and glans but also from the mons pubis, and whereas Ombrédanne covers the sac with the thin preputial skin, the author uses scrotal skin. To insure adequate nutrition for the scrotal graft the sac is sutured into the scrotum for a term of six months, and then, by a second surgical intervention, it is released again. This method lessens the danger of necrosis, and it also has the advantage that there is an adequate supply of skin for the outer covering of the sac, since the size of the scrotum may be reduced as much as is considered necessary.

Linitis Plastica.—Krauss reports the clinical history of a man, aged 30. The diagnosis linitis plastica was made during the operation. The author thinks that a clinical diagnosis of this rare condition is difficult. After the abdomen has been opened, linitis plastica may be thought of whenever the wall of the stomach is indurated and thickened. Characteristic are the age around 30, short anamnesis, presence of free hydrochloric acid and indigestibility of hard foods. The case reported seems to corroborate the opinion of several French authorities, who consider linitis plastica as a disease of the group of new formations, more specificially of the malignant growths. That it is a malignant new formation rather than an inflammatory condition is indicated by the absence of an accelerated erythrocyte sedimentation speed, by the short anamnesis, by the rapid decrease in the weight of the patient, and by the relapse after three months.

Removal of Calcaneal Spur by Means of Lateral Incision.—In discussing the surgical treatment of calcaneal spurs, Tokmakow first mentions the shortcomings of making the incision on the sole of the foot. Because of those disadvantages he advises a lateral incision. An incision curved upward is made on the lateral border of the plantar arch below the course of the sural nerve. The tendons of the peroneus longus and of the peroneus brevis muscles are not injured. After healing, the scar is located in a depression, in the region of the thin, easily movable skin, and thus it does not interfere during walking. The vascular nerve bundle, especially the external plantar artery with the like-named nerve, remains in the intermediate space between the muscles, and during the operation it is pulled downward. The intervention is done under local anesthesia and there is almost no bleeding. The author further states that he employs this incision also for removal of foreign bodies and to drain the pus from deep phlegmons of the sole of the foot.

Kazansky Meditsinsky Jurnal, Kazan

27: 107-216 (Feb.) 1931

Lung Apexes: Percussion. J. D. Mishenina.—p. 107.
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*Neuroses: Treatment by Antirabies Serum. P. Rabin and N. Sharapov.—p. 159.
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Absolute Symptom Complex.—According to Kisel the time is nearing when the laboratory will be in a position to differentiate all diseases by its methods. At present he urges the great necessity of preventive medicine, the prerequisite of which he sees in the correct classification of the human ailments. His conclusions are as follows: 1. The present classification of diseases is in a chaotic stage. 2. Bacteriologic approach is applicable to only a limited number of diseases; therefore the clinical symptoms had to act as the basis for the correct classification. 3. The present classification of diseases is partly in accordance with the clinical observations. The only diseases that could be differentiated are those which have the absolute symptom complex (by a pathognomonic symptom complex the author means a complex of symptoms that are characteristic just for this definite disease and not for any others). 5. The therapeutic view in the past occupied a position that is not at all suitable for it. The expectations placed on it have not been warranted or justified themselves insignificantly.

Acute Appendicitis: Early Intervention.—According to Rabinovich, the clinical picture of acute appendicitis can vary and often during succeeding examinations one does not get all the principal symptoms of the illness. The blood picture as well is not always dependable in the search for the nature of the acute condition present in the abdomen. It happens daily in many hospitals that patients whose symptoms are rather mild are found to have perforative or gangrenous appendixes with pus in the cavity. The author cites cases in which, on account of the so-called insidiousness of acute appendicitis, peritonitis developed and at the time the abdominal cavity was explored the infection had spread so far that the patient could not be saved. Among the most frequent complications of acute appendicitis encountered in Leningrad he lists peritonitis (14.8 per cent mortality), subdiaphragmatic abscess (2 per cent), intestinal intussusception (in his own two cases), liver abscess and paranephritis (rare). In 53.2 per cent of all cases observed the author finds recurrent attacks (if the patient was not operated on at the beginning). He does not agree with the view that acute appendicitis complicated by an abscess seldom leads to recurrences on account of degeneration of the appendix. With his experiences he noted just one death (0.58 per cent) in 171 patients operated on early. The author reaches the following conclusions: 1. All persons with a diagnosis of an acute appendicitis must as a rule be operated on in the first forty-eight hours. 2. In the intermediate and the late stages of acute appendicitis the treatment must be conservative, unless the symptoms became aggravated in such a way that surgery is required. 3. In the presence of an abscess the surgical intervention has to be limited to the opening of the abscess.

Neuroses: Treatment by Antirabies Serum.—Rabin and Sharapov observed seven highly neurotic patients (hysteria, psychasthenia and neurasthenia) in whom the only favorable results of treatment were obtained by using exclusively injections of antirabies serum. The authors state that by this method persons with various derangements of their nervous system improve in the most encouraging way. The patients noticed after getting these injections that their sleep and appetite markedly improved, their weight increased, their will was strengthened, and that constant crying, hysterical throat spasms during excitement, sudden changes in temperament and apathy as well as hysteria, hallucinations and illusions disappeared entirely. Also their hair stopped falling out, the palpitation of the heart diminished and tremulous motions of the fingers disappeared. These seven cases have been thoroughly examined and reexamined and carefully studied before and after antirabies serum administration (as the authors state, their first patients came to them for antirabies treatment after being bitten by a mad dog). Not finding any references in the literature on this subject in regard to the use of antirabies serum in the treatment of patients with nervous disorders, the authors empirically came to the following method: They used Ferri's antirabies serum administered according to his instructions (the so-called Italian method). Two injections are given daily with an interval of six hours. The initial dose is 0.1 cc. In the first two days the dose is 0.1 cc. Then for three days it is increased to 0.3 cc. each (twice daily, of course), then for six days two injections of 0.5 cc. each and the rest of the injections are given as 1 cc. in the morning and 1.5 cc. six hours later. The course of one treatment as for rabies is forty injections, although the authors obtained most encouraging results with just ten and even with eight injections in two of their cases. They analyzed the results and found that marked subjective improvements were noted in all patients treated. Increase in weight was found in 90 per cent. A negative Aschner reaction was present in two cases. The clinostatic Daniélopolu reflex was diminished in two cases,

which clearly indicated inhibition of the vagus; i. e., its return to normal. Cutaneous reaction also became almost normal. The summary of these few but nevertheless interesting observations, which are in need of further investigation, is as follows: 1. Injections of antirabies serum by the Ferri method yield good results in patients with functional disturbances of the central nervous system. 2. It gives also rather marked effects from the side of the sympathetic nervous system. 3. The positive therapeutic results obtained, the disappearance of many serious derangements of the central nervous and sympathetic systems, must be explained by the strengthening and increasing of the tonus of the system by bringing it to normal.

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*Treatment of Typhoid by Method of Besredka: One Hundred and Three Cases. A. F. Bilibin.—p. 239.
*Appendix and Ileocecal Valve: Interrelation of Their Musculature. B. P. Kirillov.—p. 241.
Retroperitoneal Perirenal Cyst: Case. V. J. Nizner.—p. 247.
*Radium Therapy in Cancer of Uterus in Regard to Blood Changes: Forty Cases. V. S. Parinov.—p. 252.
*Mercurial Encephalopathy: Its Course and Prognosis: Thirteen Cases. A. J. Kulkov.—p. 262.
Parkinsonian Disease: Eye Phenomenon. A. P. Fridman.—p. 266.

Treatment of Typhoid by Method of Besredka.—Bilibin states that there has not as yet been developed a specific antityphoid therapy. One may use many methods, but most of them have various disadvantages and contraindications. He reports the results obtained by him in treating 103 typhoid patients with typhoid vaccine tablets given by mouth (Besredka's method) as follows: Vaccinotherapy orally by Besredka's method used in the treatment of typhoid undoubtedly produces a striking therapeutic effect. It is demonstrated by lowered mortality, diminished recidivations and shortened fever period. This method deserves a much wider application.

Interrelation of Musculature of Appendix and Ileocecal Valve.—Kirillov reviews the causes of recurrence of symptoms after operation for chronic appendicitis. He has demonstrated that there is a histologic connection between these two structures. He reaches the following conclusions: In the symptom complex, course and probably in the etiology of appendicitis, the derangements of the ileocecal valve, particularly spasm, play a considerable rôle. Taking for granted the anatomic and histologic interrelation of the musculature of the ileocecal valve and of the appendix it is easy to understand why the peristaltic waves in one organ are transmitted to the other. A series of pathologic changes originating in the appendix are transmitted reflexly or directly to the ileocecal valve, thus provoking its spasm, to which in many of the chronic appendicitis cases the main group of pathologic symptoms is due. Some pathologic processes from the intestine as well as from outside it, inducing these spasms, may in a similar way provoke peristalsis and spasms of the appendix. The latter brings on the myogenic or neurogenic type of appendicitis.

Radium Therapy in Cancer of Uterus in Regard to Blood Changes.—Parinov studied blood changes during the treatment of cancer of the uterus by radium. He determined the changes in the amount of hemoglobin, the number of leukocytes and erythrocytes, the leukocytic formula of Ehrlich and the coagulation time of the blood. The author classified these changes in accordance with the grouping of cancer of the uterus as follows: (1) early operable cancer, (2) cancer on the border of operability, (3) inoperable cancer—radiotherapy indicated and (4) inoperable cancer—radiotherapy is not indicated on account of severe cachexia, metastases, fistulas; the tumor in such cases extends far beyond the uterus and pelvis. The author recognized also two grades of the prophylactic radium treatment of cancer of the uterus: (1) the type operated on with no recurrence and (2) the type operated on with infiltrations still present or so deeply located that there is no way of recognizing their structure. The author concludes that: 1. The blood picture in cancer of the uterus greatly resembles that of chlorosis. 2. The color index during the course of radiotherapy approaches the normal. 3. Marked hyperleukocytosis is a bad omen. 4. The coagulation of blood is more rapid after radiotherapy. 5. It is possible that, in the future, radium will be employed as a remedy in the treatment of hemophilia. 6. In the course of treatment with radium the number of neutrophils increases, mainly at the expense of the lymphocytes. 7. The prognosis is unfavorable if after the prophylactic radiotherapy there is a great increase in the transitory forms and the monocytes, and the color index is over 1.8. Cancer of the uterus decreases the amount of hemoglobin and radium increases it. 9. Radium has not much influence on the number of erythrocytes but increases the number of leukocytes.

Mercurial Encephalopathy.—Kulkov observed thirteen cases of mercurial poisoning and reaches the following conclusions: The differences in the course of mercurial encephalopathy in adults and in children are mostly due to the great severity with which mercury affects the child. This is why the subsequent picture of the illness is much more grave in children. Evidently, the destructive processes which have been provoked by the poison progress so far that there develops a definite limit to real improvement. In a large part this phenomenon is connected with the general mental inferiority of the child and the defects in his speech. Mutism, indeed, in most of the patients disappears, but the speech always remains remarkedly defective. Thus, the course of the disease as well as the prognosis is rather unfavorable. 2. The course of the disease in adults is satisfactory as long as the patient quits his work with mercury. But even in such cases a great deal depends on the person affected. In one case observed the patient worked with mercury for only two days and got sick, while the rest of the workers became ill in a period of months. The patient's return to work with mercury will not necessarily lead to a recidivation. 3. The laboratory investigations bring out that the gravity of symptoms in mercurial encephalopathy is, evidently, due to the storage of mercury in the system. When elimination of mercury begins, the clinical picture shows rapid improvement.

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All-Union Congress of Internists. J. J. Wolfson.—p. 257.
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Ionic Equilibrium in Physiologic Solution of Sodium Chloride for Subcutaneous and Intravenous Injections. A. Yarotzky.—p. 270.
*Pneumonia in Measles. N. L. Rudnitzky.—p. 274.
Scientific Bureau for Disability Survey. K. J. Baryshnikov.—p. 279. C'td.
Treatment of Deforming and Ankylosing Arthroses. E. Nilsen.—p. 288.

Pneumonia in Measles.—According to Rudnitzky, pneumonia is often one of the most dangerous complications of measles. Figures of various authors vary but on the average pneumonia represents from 67 to 83 per cent of all lethal complications of measles. On account of the great importance of such a complication the author undertook a study of 6,487 records of measles cases of which 1,159 have been complicated by pneumonia, which forms 17.8 per cent (Archives of Botkin's Hospital in Leningrad for the years 1894, 1897, 1899, 1907, 1914, 1915, 1921, 1925, 1926 and 1927; years have been selected in conjunction with the increase in measles epidemics). From these statistical investigations the author concludes that: 1. The largest percentage of cases of pneumonia complicating measles occur in May, the smallest in October. The mortality of such pneumonia cases is highest in the summer months and lowest during the winter. 2. By the combination of measles-pneumonia with other toxic infections (scarlet fever, diphtheria, erysipelas) the mortality increases. Gastro-intestinal disorders during pneumonia make the prognosis worse. Rickets and athrepsia sharply increase the frequency of its lethal termination. 3. Exacerbation of a latent tuberculosis or its appearance in the lungs and bronchial lymph nodes occurs in 3 per cent of all measles-pneumonia cases. Two thirds of all cases of active tuberculosis were fatal. 4. Exudative pleurisy as well as empyema complicates measles-pneumonia cases (1 per cent each). 5. The age group to 5 years is the one that is most affected with measles-pneumonia. The group from 11 to 20 years is affected the least. Pneumonia in the group from 20 to 30 years is much more frequently fatal. 6. In a large percentage of all cases the duration of the pneumonia is not over one week. The highest mortality occurs in the first three days of the illness. 7. Pneumonia as a rule appears during the first week of measles, usually on the fifth or seventh day of the first week. As a rule

the earlier the pneumonia appears, the worse the course of the disease. 8. The lower lobes are the ones that became affected primarily; the left more often than the right ones. 9. Migratory pneumonias give a much larger percentage of fatal cases. As the inflammatory process involves the affected lung, the percentage of mortality increases simultaneously; there also have been cases in which the part of the lung involved was not extensive at all and still the outcome was lethal. In most of the cases studied, not more than two lobes were affected at the same time. 10. The number of cases terminated by absorption greatly exceeds those by resolution. 11. The temperature curve in measles-pneumonia is not characteristic; bronchadenitis which complicates the pneumonia gives somewhat sharp temperature amplitudes.

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Venous Pressure: Method of Determination of Functional Capacity of Cardiovascular System. A. F. Grozev and V. P. Khorujenko.—p. 1549.
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*Roentgen Irradiation in Treatment of Inflammatory Conditions in Women's Pelvis: Fifty Cases. N. M. Beztchinskaya.—p. 1564.
*Curettage of Uterus by Abdominal Route: Seventy-Four Cases. A. V. Khokhlov.—p. 1564.
*Treatment of Cerebrospinal Epidemic Meningitis: Forty-Six Cases. L. D. Yampolskiy.—p. 1566.
Erysipelas in Nurslings. S. Faershtein.—p. 1573.
*Vesiculitis: Treatment by Vasopuncture: Fifteen Cases. M. K. Egiazarov.—p. 1576.
*Bernatzkiy's Sex Determination Reaction. K. Kosyakov.—p. 1583.

Roentgen Irradiation in Treatment of Pelvic Inflammatory Conditions.—Beztchinskaya observed fifty young women with chronic inflammation of their pelvic organs, for the treatment of which small roentgen doses have been given. The author's conclusions are as follows: 1. The treatment of chronic inflammations of the female genitalia by small roentgen doses must occupy a suitable place among other conservative methods of treatment on account of favorable results obtained (in the author's investigations complete clinical cure was noted in 75 per cent of all patients submitted to roentgen therapy). The method is simple and is convenient also for the patients, because it does not take them away from their work for a long time, is accessible to every one and does not require a large investment. 2. A radiologist who is experienced and careful in his dosage can give roentgen treatments even in the dispensary under the permanent control of a gynecologist. 3. Irradiation with small doses does not destroy normal ovulation; with the arrest of the inflammatory process, four women, who were under the author's treatment, became pregnant. No external complications have been observed. 5. Inflammations of the adnexa and parametritis yielded best to treatments; such good results have not been obtained in cases of metritis and endometritis. Chronic inflammations of gonorrheal character are the most refractory to roentgen therapy.

Curettage of Uterus by Abdominal Route.—During one year Khokhlov performed seventy-four uterine curettages by the abdominal route. They were done during operations for various other pelvic conditions. An even postoperative course with no elevation of temperature was noted in thirty-four patients. In seventeen patients there was a slight elevation of temperature for just a day but in sixteen patients operated on it persisted for a longer time. The following are the indications for this procedure: ectopic pregnancy, chronic inflammatory processes in the adnexa, plastic operations on the tubes and ovaries. The author recommends curettage by the abdominal route as an operation that is safe, expedient and easy to perform.

Treatment of Cerebrospinal Epidemic Meningitis.—From results of treatment of forty-six patients with cerebrospinal epidemic meningitis, Yampolskiy concludes: 1. Intralumbar and intramuscular injections of serum together with intravenous injections of massive doses of methenamine have a favorable, sometimes abortive, action on the course of the disease. 2. A lot depends on the time one starts the treatment. 3. For a better therapeutic effect one has to perform a rigid differential bacteriologic diagnosis, i. e. differentiate the strains of the exciting agent of the cerebrospinal meningitis. 4. Pure vaccinotherapy without a parallel administration of serum is a poor method of treatment for it deprives the patient of an active therapeutic agent. 5. Prophylactic measures, as vaccination and actual propaganda against bacillus carriers, are also of importance in combating cerebrospinal epidemic meningitis.

Treatment of Vesiculitis by Vasopuncture.—Egiazarov observed fifteen cases of gonorrheal vesiculitis, which is one of the most serious chronic complications of gonorrhea. He reaches the following conclusions: 1. Vasopuncture should be performed in only those cases in which the most intensive and prolonged physical therapy has not produced any positive results. 2. A 5 per cent solution of collargol is a good bactericide and one should not attempt to use higher concentrations of it. 3. Notwithstanding the apparent success, one should not perform this minor surgical operation on both sides. 4. The Bordet-Gengou reaction is of some help in making the diagnosis of vesiculitis.

Bernatzkiy's Sex Determination Reaction.—For the purpose of sex determination Kosyakov examined 588 samples of blood from persons of different nationalities and various ages. The author states that, even if science is ever in a position to determine sex hormone, the reaction must be a quantitative one, for it is necessary to solve the problem not only to which sex the hormone belongs but also of which hormone there is less or more. With such principles in his mind the author verified Bernatzkiy's (1924) reaction for sex determination. The latter is characterized by its simple technic as well as by the fact that it requires a small amount of blood. The author's conclusions are as follows: 1. Bernatzkiy's reaction on blood stains does not allow one to differentiate sex. 2. The reaction is of a quantitative character. 3. Phenomena of elective adsorption play a marked rôle in it.

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Pseudoglioma or Glioma. W. P. C. Zeeman.—p. 2154.
Syphilis and Gonorrhea in Utrecht and Vicinity Since 1910. J. J. Zoon.—p. 2162.
Congenital Body Weakness as Revealed by Statistics and Practice. M. Straub and L. J. del Baere.—p. 2166.
*Anatomic Investigation in Case of Split Pelvis. J. W. Andriessen.—p. 2186.

Anatomic Investigation in Case of Split Pelvis.—Andriessen points out that split pelvis may be either congenital or acquired. There are two distinct types of congenital split pelvis: (1) one in which the ventral surface of the sacrum is convex, and (2) one in which the ventral surface is concave. In the case in question, the author and his associates were dealing with the cadaver of a man, aged 29, well proportioned and with firm muscles. The man was born with an ectopia vesicae and an epispadias, and there was a diastasis of the rectus muscles of the abdomen. At the age of 2 the patient was subjected to an intervention, which consisted in the passing of a wide support about the pelvis, the purpose of which was to bring the separated parts together. Later, the pelvis was placed also in the Lorenz vice. A number of further interventions were applied during the following years, whereby it proved possible to eliminate the diastasis of the rectus muscles of the abdomen, in the uppermost part. Finally, a plastic operation was resorted to and the bladder was closed, the urine being drawn off by means of a catheter. The patient suffered repeatedly from infections of the urinary passages and died, at the age of 29, from pyelonephritis.

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Variations in Volume of Extremities. D. Rancken.—p. 176.
*Effect of Subcutaneous and Subconjunctival Injections of Ergotamine Tartrate on Intra-Ocular Tension in Glaucoma. S. Werner.—p. 196.
Alcohol Consumption in Finland. Leineberg.—p. 220.

Subconjunctival Injections of Ergotamine Tartrate in Glaucoma.—Werner finds that one subconjunctival injection of ergotamine tartrate as a rule decreases the pressure in glaucoma and may normalize it, the effect lasting from one to two days. The treatment is most effective in glaucoma simplex, but juvenile, secondary and absolute glaucoma also respond to it. The therapeutic action of ergotamine tartrate is, however, less than that of miotics or epinephrine. Subcutaneous injections of the drug generally cause a slight or no decrease in tension.